#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 23.09.98 Test oil : 23.09.98

Combination No. : 0 402 670 815

Injection pump

Pump designation : PE12P120A320LS7923

EP type number : 0 412 620 851

Covernor

Governer design. : RSV375...950P0A701

Governer no. : 0 421 833 627

Cust. part No. : 0 280 742 002

Customer-spec. information Customer : MB-NFZ Motor : OM 444 LA Power KW : 605.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 200 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance har  $: \leftarrow 1.0$ 

Prestroke mm : 4.85 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

: 12- 1- 5- 9- 8 Firing order

: - 3- 4- 11- 10 : - 2- 6- 7

: 0-45-60-105-120 Phasing

: -165-180-225-240 : -285-300-345

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance  $^{\circ}NW$  : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm :

930

Book travel in mr. 17 /G	
Rack travel in mm: 13.40 + Tolerance mm: + 0.10 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 256.0	Rated speed rpm : 930 Aneroid pressure hPa : 1500
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 256.0 Tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 6.0	cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0
Check tolerance cm3/1000s. : 10.0	
	CONTROL LEVER
Rated speed rpm : 375	control lever position degree : 90.0
Rack travel in mm : 5.20 Tolerance mm : + 0.10	tolerance degree : +- 4.0
Del. quantity + cm3/1600 strokes : 17.0 +	RATED SPEED rack travel mm : 12.40
Tolerance	Rated speed rpm : 980
cm3/1000 strokes : +- 3.0 +	Tolerance 1/min : +- 5
Check tolerance	
cm3/1000s. : +- 6.0	rack travel mm : 4.00
Spreed +	Rated speed rpm : 1055 Tolerance 1/min : +- 5
cm3/1000 strokes : 8.0	rocerance minima.
Check tolerance	rack travel mm : 0.85
cm3/1000s. : 12.0	Tolerance mm : + 0.55
†	Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
Ī	LOW IDLE
GUIDE SLEEVE POSITION	
+	control lever
+	position degree : 72.0
control lever	tolerance degree : +- 4.0
position degree : - 3 Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.85 Tolerance mm: + 0.55	Rated speed rpm : 100
+	CRT mm min. : > 13.00
governor spring  pre-tension +  click setting x : 4.00 +	Testing:
	Rated speed rpm : 375 rack travel mm : 5.20

Tolerance mm	: <b>←</b> 0.10	‡	Aneroid pressure hPa : 1050	
SET IDLE AUXILIA	ARY SPRING	İ	Rated speed rpm : 600 Del. quantity	
rack travel mm	: 2.00	-	cm3/1000 strokes : 273.0 Tolerance	
TOPOUT CONTROL	······		cm3/1000 strokes : +- 1.5	
TORQUE CONTROL Rated speed rpm	: 930	Ŧ	Check tolerance cm3/1000s. : +- 4.5	
rack travel mm Tolerance mm		‡	Spreed Tolerance	
		+	cm3/1000 strokes : 8.0 Check tolerance	
Rated speed rpm rack travel mm	: 12.80	Ŧ	cm3/1000s. : 12.0	
Tolerance mm	: +- 0.10	‡	-	
ANEROID/ALTITUDE	=		Aneroid pressure hPa : -	
COMPENSATOR TEST		Ţ	Rated speed rpm : 500	
		‡	Del. quantity cm3/1000 strokes : 146.0	
SETTING		+	Tolerance cm3/1000 strokes : +- 1.0	
Rated speed rpm	: 600	Ŧ	Check tolerance	
Pressure hPa rack travel mm		‡	cm3/1000s. : +- 4.0 Spreed	
Tolerance mm	: +- 0.10	+	Tolerance	
Rated speed rpm	: 600	Ī	cm3/1000 strokes : 8.0 Check tolerance	
Pressure hPa rack travel mm	: - : 7.90	1	cm3/1000s. : 12.0	
Tolerance mm	: +- 0.10	+		
2-stage LDA sett	ing	Ī	STARTING FUEL DELIVERY	
Rated speed rpm	: 600	Ŧ	Rated speed rpm : 100	
Pressure hPa rack travel mm		‡	Del. quantity cm3/1000 strokes : 275.0	
MEASUREMENT		1	Tolerance cm3/1000 strokes : +- 15.0	
		Ŧ	Check tolerance	
Rated speed rpm	: 600	‡	cm3/1000s. : +- 19.0	
Pressure hPa rack travel mm	: 450 : 8.50	<u>†</u>		
Tolerance mm	: +- 0.10	Ŧ		
Pressure hPa	: 800	‡	LOW IDLE	
rack travel mm Tolerance mm	: 11.40	+	Rated speed rpm : 375	
		Ţ	Rack travel in mm : 5.20	
Pressure hPa rack travel mm	: 1200 : 13.10	‡	Tolerance mm : +- 0.10 Del. quantity	
rack travel mm Tolerance mm	: +- 0.10	+	cm3/1000 strokes : 17.0	
		‡	Tolerance cm3/1000 strokes : +- 3.0	
FUEL DELIVERY CHA	ADACTEDISTICS	+	Check tolerance	
I OEF DEFINER! CH	WUWE IEKTO ITCO	Ţ	cm3/1000S. : +- 6.0 Spreed	
		1		

Tolerance

cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.09.98 : ISO 4113 Test oil

Combination No. : 0 402 676 838

Injection pump

Pump designation : PE6P120A320LS7909 EP type number : 0 412 626 963

Governor

Governer design. : RSV550...800P0A671

Governer no. : 0 421 833 589

Cust. part No. : 0270743402

Customer—spec. information Customer : MB-NFZ

: OM441 LA eoromot Motor Power KW

: 218.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. l/h : 105 Tolerance l/h:  $\leftarrow$  15.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x Length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

: 0-60-120-180-240 Phasing

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : <del>+-</del> 0.75

Barrel no. : 6

### BASIC SETTING

Rated speed rpm : 780

	1
Rack travel in mm : 14.50 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 229.0	Rated speed rpm : 780 Aneroid pressure hPa : 1200
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 229.0 Tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 6.0	- cm3/1000 strokes : 6.0 - Check tolerance - cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	
	CONTROL LEVER
Rated speed rpm : 550  Rack travel in mm : 4.30	control lever position degree : 80.0
Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	Rated speed rpm : 830 rack travel mm : 13.50
cm3/1000s. : +- 6.0 Spreed Tolerance	Rated speed rpm : 875 Tolerance 1/min : + 4 rack travel mm : 4.00
cm3/1000 strokes : 8.0 Check tolerance	rack travel mm : 0.85
cm3/1000s. : 12.0	Tolerance mm : + 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 831 rack travel mm : 13.50
GUIDE SLEEVE POSITION	Rated speed rpm : 876 Tolerance 1/min : +- 4 rack travel mm : 4.00
control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm : 832 rack travel mm : 13.50
governor spring pre-tension click setting x : 2.25	Rated speed rpm : 877 Tolerance 1/min : + 4 rack travel mm : 4.00
	1

rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300	Rated speed rpm : 575 Tolerance 1/min : +- 30  SET IDLE AUXILIARY SPRING
Rated speed rpm : 833 rack travel mm : 13.50	rack travel mm : 2.00
Rated speed rpm : 878 Tolerance 1/min : + 4 rack travel mm : 4.00	TORQUE CONTROL Rated speed rpm : 780 rack travel mm : 14.50 Tolerance mm : +- 0.05
rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300	Rated speed rpm : 700 rack travel mm : 14.50 Tolerance mm : +- 0.10
Rated speed rpm : 834 rack travel mm : 13.50 Rated speed rpm : 879	ANEROID/ALTITUDE COMPENSATOR TEST
Tolerance 1/min : +- 4 rack travel mm : 4.00	SETTING
rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300	CRT ZERO POSITION  Rack travel in mm : 9.25 Tolerance mm : +- 0.15
Rated speed rpm : 835 rack travel mm : 13.50	Rated speed rpm : 500 Pressure hPa : -
Rated speed rpm : 880 Tolerance 1/min : +- 4	MEASUREMENT
rack travel mm : 4.00  rack travel mm : 0.85  Tolerance mm : + 0.55	+ Pressure hPa : 400 + rack travel mm : 1.20 + Tolerance mm : + 0.05
Rated speed rpm : 1300	Pressure hPa : 700 rack travel mm : 3.60 Tolerance mm : + 0.20
LOW IDLE	
control lever position degree : 70.0	FUEL DELIVERY CHARACTERISTICS
Setting point w/out bumper spring	Aneroid pressure + hPa : 1200
Rated speed rpm : 100	Rated speed rpm : 700 Del. quantity
CRT mm min. : > 19.50	- cm3/1000 strokes : 234.0 - Tolerance
Testing:	cm3/1000 strokes : + 3.0 Check tolerance
Rated speed rpm : 550 rack travel mm : 4.30 Tolerance mm : + 0.10	+ cm3/1000S. : +- 6.0 + Spreed + Tolerance
rack travel mm : 2.00	+ cm3/1000 strokes : 8.0 +

	: 12.0
Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 138.0
Tolerance cm3/1000 strokes	
Check tolerance	
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
5/10005.	. 12.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity cm3/1000 strokes	
Tolerance	
cm3/1000 strokes Check tolerance	
cm3/1000S.	: <del></del>
LOW IDLE	
Rated speed rpm	: 550
Rack travel in mm	
Tolerance mm Del. quantity	: +- 0.10
cm3/1000 strokes Tolerance	: 19.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: +- 6.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 074 878T4

Injection pump

Pump designation : PES4M55C32ORS188 EP type number : 0 410 054 935

Governor

Governer design. : RSF400/2000M82 Governer no. : 0 420 021 283

Cust. part No. : A 40007-4878

Customer-spec. information
Customer : DPICO
Motor : OM601-2.3L
Power KW : 58.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

tolerance mm : + 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270 : 0.80

1.00

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance : +- 0.20

Check

tolerance °NW :  $\leftarrow$  0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes : +- 0.5

: +- 1.5

Check tolerance cm3/1000s.

Spreed

A09

Tolerance -	Tolerance mm : +- 0.50
cm3/1000 strokes : 2.5	<u> </u>
Check tolerance	SET IDLE CONTROL LEVER POSITION
cm3/1000s. : 3.0	Rated speed rpm : 1000
Rated speed rpm : 400	CRT mm max. : 1.45
Rack travel in mm : 4.90	CRI mili max 1.45
Tolerance mm : + 0.10	
Del. quantity	LOW IDLE
cm3/1000 strokes : 5.5	1000 1000
Tolerance	
cm3/1000 strokes : +- 0.5	control lever
Spreed -	position degree : 12.5
Tolera ce	tolerance degree : +- 2.0
cm3/1000 strokes : 1.0 -	L. C.
	Setting point w/out bumper spring
_	Rated speed rpm : 400
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.90
WITH GOVERNOR	- 1 40K (1446C mm . 4.70
WEIT COVERNOR	SET IDLE AUXILIARY SPRING
IDLE STAGE	Rated speed rpm : 500
	Rated speed rpm : 500 rack travel mm : 3.40
	- rack travel mm : 3.40 - Tolerance mm : +- 0.10
Rack travel in mm: 6.25	
Tolerance mm : + 0.25	- Load pick-up
-	-
	- Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 13.00
-	
Rated speed rpm : 1000	- Rated speed rpm : 1000
Ref. pressure	
ALDA / ADA hPa : 1100	- CRT mm max. : 1.45
Del. quantity	
cm3/1000 strokes : 37.5	- rack travel mm : 4.90 - Rated speed rpm : 400
Tolerance	- Rated speed rpm : 400
cm3/1000 strokes : +- 0.5 +	•
Check tolerance	-
cm3/1000s. : +- 1.5	
Spreed	- TORQUE CONTROL
Tolerance	
cm3/1000  strokes: 2.5	- Rated speed rpm : 1000
Check tolerance	- rack travel mm : 12.15 - Tolerance mm : +- 0.05
cm3/1000s. : 3.0	- Tolerance mm : +- 0.05
+	•
	- Rated speed rpm : 2000
RATED SPEED +	rack travel mm : 12.15 Tolerance mm : + 0.10
+	- Tolerance mm : +- 0.10
t	•
control lever	
position degree : $50.0$	ADJUSTMENT TEST ADA/ALDA
†	•
Rated speed rpm : 2250	SETTING
rack travel mm : 7.60 + Tolerance mm : + 0.25 +	
Tolerance mm : + 0.25 +	Rated speed rpm : 1000
<del></del> +	Ref. pressure
Rated speed rpm : 2550 +	· ALDA / ADA hPa : 940 · rack travel mm : -0.10
rack travel mm : 0.50	rack travel mm : -0.10
·	

- 1			
Tolerance mm	: + 0.10	Tolerance mm Del. quantity	: +- 1.50
MEASUREMENT	+	cm3/1000 strokes	: 60.3
Rated speed rpm	: 1000	Tolerance cm3/1000 strokes	: +- 4.0
Ref. pressure	. 7000	Check tolerance	, 1- 4.0
ALDA / ADA hPa	: 900	cm3/1000s.	: +- 5.0
rack travel mm Tolerance mm	: -0.40 : +- 0.10	Spreed Tolerance	
toter arice lim	. 1- 0.10	cm3/1000 strokes	: 6.0
Ref. pressure		Check tolerance	
ALDA / ADA hPa rack travel mm	: 750 : -1.50	cm3/1000s.	: 6.0
Tolerance mm	: + 0.20		
	+		
		LOW IDLE	
FUEL DELIVERY CHAR	RACTERISTICS		
Dof	+	Rated speed rpm	
Ref. pressure ALDA / ADA hPa	: 1100	rack travel mm Tolerance mm	: 4.90 : +- 0.10
Rated speed rpm		Del. quantity	. +- 0.10
Del. quantity	+	cm3/1000 strokes	: 6.8
cm3/1000 strokes	: 41.8	Check tolerance	
Tolerance cm3/1000 strokes	10	cm3/1000s.	: <del>-</del> 2.3
Check tolerance	1.0	Spreed Check tolerance	
	: + 2.0	cm3/1000s.	: 1.5
Spreed	+		
Tolerance cm3/1000 strokes	: 2.5		
Check tolerance	· 2.3		
cm3/1000s.	: 3.0		
	†	control lever	
		position degree	: > 47.00
HIGH IDLE	+	,	
Ref. pressure	Į	control lever	
ALDA / ADA hPa	: 1100	position degree	: < 43.50
Rated speed rpm	2250		
rack travel mm Tolerance mm	: 7.60 + : +- 0.25 +	SETTING PNEUMATIC	FAST THE (DIA)
Del. quantity	1	(PLA) POSITION	TAST TULE (FEA)
cm3/1000 strokes	: 24.1		
Tolerance			
cm3/1000 strokes Check tolerance	: + 2.0	control lever position degree	: 12.5
	: + 3.0	tolerance degree	
Spreed	+		
Tolerance	. 35	Rated speed rpm	: 425
cm3/1000 strokes Check tolerance	: 2.5	Rack travel in mm	: 8.70
	: 3.0	Tolerance mm	: +- 0.80
	+	Del. quantity	
CTARTING FUEL ASI	+	cm3/1000 strokes	: 21.0
STARTING FUEL DELIV	VERY	Tolerance cm3/1000 strokes	: +- 3.5
Rated speed rpm	: 100	Check tolerance	· · J.J
	: 21.60	cm3/1000s.	: +- 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 074 879T4

Injection pump

Pump designation : PES4M55C320RS188 EP type number : 0 410 054 935

Governor

Governer design. : RSF400/2000M80 Governer no. : 0 420 021 281

Cust. part No. : A 40007-4879

Customer-spec. information Customer : DPICO : 0M601-2.3L Motor

: 58.0 Power KW

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar :  $\leftarrow$  1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 2.05 : +- 0.05 Prestroke mm Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

0.80 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50 Tolerance : +- 0.20

Check

tolerance °NW : +- 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s.

: + 1.5

Tolerance cm3/1000 strokes	: 2.5	Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: 3.0	SET IDLE CONTROL LEVER POSITION
Rated speed rpm	: 400	Rated speed rpm : 1000
Rack travel in mm Tolerance mm		CRT mm max. : 1.45
Del. quantity cm3/1000 strokes Tolerance	: 5.5	LOW IDLE
cm3/1000 strokes Spreed	: +- 0.5	control lever position degree : 14.0
Tolerance cm3/1000 strokes	: 1.0	tolerance degree : +- 2.0  Setting point w/out bumper spring
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP	Rated speed rpm : 400 rack travel mm : 4.90
WITH GOVERNOR		SET IDLE AUXILIARY SPRING
IDLE STAGE	+	Rated speed rpm : 500 rack travel mm : 3.40 Tolerance mm : +- 0.10
Rack travel in mm Tolerance mm		Load pick-up
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm : 250 rack travel mm : 12.30
Rated speed rpm Ref. pressure	: 1000	Rated speed rpm : 1000
ALDA / ADA hPa Del. quantity	+	CRT mm max. : 1.45
cm3/1000 strokes Tolerance cm3/1000 strokes	+	rack travel mm : 4.90 Rated speed rpm : 400
Check tolerance cm3/1000s.	•	
Spreed Tolerance	+	TORQUE CONTROL
cm3/1000 strokes Check tolerance cm3/1000s.	: 2.5	Rated speed rpm : 1000 rack travel mm : 12.15 Tolerance mm : +- 0.05
RATED SPEED		Rated speed rpm : 2000 rack travel mm : 12.15 Tolerance mm : + 0.10
control lever position degree	: 50.0	
Rated speed rpm rack travel mm Tolerance mm	: 7.40 +	FUEL DELIVERY CHARACTERISTICS Ref. pressure
Rated speed rpm rank travel mm	: 2550	ALDA / ADA hPa : - Rated speed rpm : 2000

Del. quantity		+ Del. quantity
cm3/1000 strokes	: 41.8	+ cm3/1000 strokes : 6.8
Tolerance		+ Check tolerance
cm3/1000 strokes	: +- 1.0	+ cm3/1000s. : +- 2.3
Check tolerance		+ Spreed
cm3/1000S.	: +- 2.0	+ Check tolerance
Spreed		+ cm3/1000s. : 1.5
Tolerance		+
cm3/1000 strokes	: 2.5	+
Check tolerance		+
cm3/1000s.	: 3.0	<u> </u>
		+
HIGH IDLE		
HIGH TOCK		position degree : > 47.00
Ref. pressure		+
ALDA / ADA hPa		+ control lever
Rated speed rpm	: 2250	position degree : < 44.50
rack travel mm	: 7.40	+
Tolerance mm	: +- 0.25	
Del. quantity		SETTING PNEUMATIC FAST IDLE (PLA)
cm3/1000 strokes	: 24.1	+ (PLA) POSITION
Tolerance	,	1
m3/1000 strokes	: +- 2.0	1
Check tolerance		control lever
cm3/1000s.		position degree : 14.0
Spreed		tolerance degree : + 2.0
Folerance		T coterance degree . '- c.u
cm3/1000 strokes	. 25	Rated speed rpm : 425
Check tolerance		Marca speed (pill - 465
	: 3.0	Rack travel in mm: 8.70
	. 5.0	+ Tolerance mm : +- 0.80
		+ Del. quantity
STARTING FUEL DEL	TVEDY	+ cm3/1000 strokes : 21.0
SINKITING FOEL DEC	TACKI	Tolerance
Rated speed rpm	. 100	+ cm3/1000 strokes : + 3.5
raceu speed rpm	. 100 . 21 40	
rack travel mm	1.0U	+ Check tolerance
Tolerance mm	1.50	+ cm3/1000s. : + 4.5
el quantity	. 50.0	Vacuum hPa : 400.0
m3/1000 strokes	: 59.0	†
olerance	/ 0	†
m3/1000 strokes	: +- 4.0	†
heck tolerance		
m3/1000s.	: <del>+-</del> 5.0	† TESTING PNEUMATIC SHUTOFF DEVICE
preed		†
olerance	4 -	+ Rated speed rpm : 400
m3/1000 strokes	: 6.0	+ Vacuum hPa : -450.0
heck tolerance		+
m3/1000s.	: 6.0	†
		1
		End of test specification sheet
OW IDLE		
		+

Rated speed rpm : 400 rack travel mm : 4.90 Tolerance mm : +- 0.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 30.09.98 Test oil : 30.09.98

Combination No. : 0 400 974 885T4

Injection pump

Pump designation : PES4M55C32ORS167 EP type number : 0 410 054 960

Governor

Governer design. : RSF400/2000M56-14

Governer no. : 0 420 021 271

Cust. part No. : A 40007-4885

Customer-spec. information

Customer : DPICO

: 0M601-2.3L (Exp) Motor

Power KW : 58.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

0.801.00

Start of delivery blocking

°NW after s.o.d. : 15.50 Tolerance : + 0.20

Check

tolerance °NW : + 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 1.5

Tolerance cm3/1000 strokes : 2.5	+ Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 400	Rated speed rpm : 1000
Rack travel in mm : 5.00 Tolerance mm : +- 0.10	+ CRT mm max. : 1.45
Del. quantity cm3/1000 strokes : 5.5 Tolerance	LOW IDLE
cm3/1000 strokes : +- 0.5 Spreed	control lever position degree : 14.0
Tolerance cm3/1000 strokes : 1.0	tolerance degree : +- 2.0  Setting point w/out bumper spring
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 400 rack travel mm : 5.00
	SET IDLE AUXILIARY SPRING
IDLE STAGE	Rated speed rpm : 500 rack travel mm : 3.40 Tolerance mm : + 0.10
Rack travel in mm : 6.25 Tolerance mm : +- 0.25	Load pick-up
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 250 rack travel mm : 12.50
Rated speed rpm : 1000 Ref. pressure	Rated speed rpm : 1000
ALDA / ADA hPa : 1100 Del. quantity	CRT mm max. : 1.45
cm3/1000 strokes : 37.5 Tolerance cm3/1000 strokes : +- 0.5	rack travel mm : 5.00 Rated speed rpm : 400
Check tolerance cm3/1000s. : +- 1.5	
Spreed Tolerance	TORQUE CONTROL
cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0	+ Rated speed rpm : 1000 + rack travel mm : 12.15 + Tolerance mm : + 0.05
RATED SPEED	Rated speed rpm : 1800 rack travel mm : 11.90 Tolerance mm : + 0.10
control lever position degree : 50.0	+ Rated speed rpm : 2000 - rack travel mm : 11.80 + Tolerance mm : + 0.10
Rated speed rpm : 2250 rack travel mm : 7.40 Tolerance mm : +- 0.25	ADJUSTMENT TEST ADA/ALDA
Rated speed rpm : 2550 rack travel mm : 0.50	+ SETTING

Rated speed rpm	: 1000	+ Rated speed rpm : 2250
Pef pressure	. 1000	rack travel mm : 7.40
Ref. pressure ALDA / ADA hPa	. 040	Tolerance mm : +- 0.25
ALUA / AUA IIFA	. 740	Toterance min : T- 0.25
rack travel mm		+ Del. quantity
Tolerance mm	: +- 0.10	+ cm3/1000 strokes : 24.1
		+ Tolerance
MEASUREMENT		+ cm3/1000 strokes : +- 2.0
		+ Check tolerance
Rated speed rpm	• 1000	+ cm3/1000s. : +- 3.0
	. 1000	
Ref. pressure ALDA / ADA hPa	000	Spreed
		+ Tolerance
rack travel mm		+ cm3/1000 strokes : 2.5
Tolerance mm	: +- 0.10	+ Check tolerance
		+ cm3/1000s. : 3.0
Ref. pressure		1
ALDA / ADA hPa	• 750	
rack travel mm		STARTING FUEL DELIVERY
		T STAKITING FUEL DELIVERI
Tolerance mm	. <del></del> 0.20	†
		+ Rated speed rpm : 100
		rack travel mm : 21.60
		-
FUEL DELIVERY CHA	ARACTERISTICS	→ Del. quantity
		+ cm3/1000 strokes : 59.0
Ref. pressure		Tolerance
ALDA / ADA hPa	, 1100	cm3/1000 strokes : +- 4.0
Rated speed rpm	: 1800	+ Check tolerance
Del. quantity		+ cm3/1000s. : $+$ 5.0
cm3/1000 strokes	: 40.6	+ Spreed
Tolerance		+ Tolerance
cm3/1000 strokes	: <del></del> 0.8	+ cm3/1000 strokes : 6.0
Check tolerance		+ Check tolerance
cm3/1000s.	: +- 1.8	
	: +- 1.0	+ cm3/1000s. : 6.0
Spreed		†
Tolerance		+
cm3/1000 strokes	: 2.5	+
Check tolerance		<del></del>
cm3/1000s.	: 3.0	LOW IDLE
Ref. pressure		Rated speed rpm : 400
	. 1100	
ALDA / ADA hPa		+ Del. quantity
Rated speed rpm	: 2000	+ cm3/1000 strokes : 6.8
Spreed		+ Check tolerance
Del. quantity		$+$ cm3/1000s. : $\leftarrow$ 2.3
cm3/1000 strokes	: 40.7	+ Spreed
Tolerance		+ Check tolerance
cm3/1000 strokes	: +- 1.0	+ cm3/1000s. : 1.5
Check tolerance		1.5
	. + 30	Ţ
cm3/1000s.	: <del></del> 2.0	<b>†</b>
Spreed		
Tolerance		+
cm3/1000 strokes	: 2.5	+
Check tolerance		+
cm3/1000s.	: 3.0	control lever
· · · · · · · · · · · · · · · · · · ·	. 3.0	position degree : > 47.00
		T position degree . > 47.00
		†
		- 🗜
HIGH IDLE		- + control lever
HIGH IDLE		- + control lever + position degree : < 44.50
		,
HIGH IDLE  Ref. pressure ALDA / ADA hPa	: 1100	,

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## SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever

position degree : 14.0 tolerance degree : +- 2.0

Rated speed rpm : 425

Rack travel in mm : 9.10 Tolerance mm : + 0.80

Del. quantity

cm3/1000 strokes : 22.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.5

Check tolerance

cm3/1000S. : ← 4.5 Vacuum hPa : 400.0

### TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.09.98 Test oil : ISO 4113

Combination No. : 0 400 074 886T4

Injection pump

Pump designation : PES4M55C32ORS167 EP type number : 0 410 054 960

Governor

Governer design. : RSF400/2000M55-7 Governer no. : 0 420 021 268

Cust. part No. : A 40007-4866

Customer—spec. information

Customer : DPICO

Motor : 0M601-2.31 (Dom)

Power KW : 58.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 21.00

Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270 : 0.80

1.00

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance : + 0.20 Check

neck

tolerance °NW : + 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 1.5

Tolerance +	
cm3/1000 strokes : 2.5	SET IDLE CONTROL LEVER POSITION
Check tolerance cm3/1000s. : 3.0	Rated speed rpm : 1000
Rated speed rpm : 400 + Del. quantity	CRT mm max. : 1.45
cm3/1000 strokes : 5.5 + Tolerance +	LOW IDLE
cm3/1000 strokes : +- 0.5 Spreed	
Tolerance cm3/1000 strokes : 1.0	control lever position degree : 14.0
(B) SETTING OF INJECTION PUMP	SET IDLE AUXILIARY SPRING
WITH GOVERNOR	Rated speed rpm : 500
TO E STACE	rack travel mm : 3.50 Tolerance mm : + 0.10
IDLE STAGE	Load pick-up
Rack travel in mm: 6.25	Rated speed rpm : 250 rack travel mm : 12.20
Tolerance mm : + 0.25	
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1000
Rated speed rpm : 1000 +	CRT mm max. : 1.45
Ref. pressure ALDA / ADA hPa : -	rack travel mm : 5.10 Rated speed rpm : 400
Del. quantity	Rated speed rpm : 400
cm3/1000 strokes : 37.5	
cm3/1000 strokes : +- 0.5 +- Check tolerance +-	TORQUE CONTROL
cm3/1000s. : + 1.5	Rated speed rpm : 1000
Spreed + Tolerance +	rack travel mm : 12.15 Tolerance mm : +- 0.05
cm3/1000 strokes : 2.5 + Check tolerance +	Rated speed rpm : 1800
cm3/1000s. : 3.0	rack travel mm : 11.90 Tolerance mm : + 0.10
RATED SPEED	Rated speed rpm : 2000
‡	rack travel mm : 11.80 Tolerance mm : + 0.10
control lever position degree : 50.0	
Rated speed rpm : 2250	
rack travel mm : 7.70 + Tolerance mm : + 0.25	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 2550	Ref. pressure ALDA / ADA hPa : -
rack travel mm : 0.50 Tolerance mm : + 0.50	Rated speed rpm : 1800 Del. quantity
Total disce that . The U.BU	cm3/1000 strokes : 40.6
+	

Tolerance		† Tolerance
cm3/1000 strokes	: <del>-</del> 0.8	+ cm3/1000 strokes : 6.0
Check tolerance		+ Check tolerance
cm3/1000s.	: +- 1.8	- cm3/1000s. : 6.0
Spreed		1
Tolerance		1
cm3/1000 strokes	. 25	1
Check tolerance		
cm3/1000s.	: 3.0	LOW IDLE
CIIS7 10003.	. 5.0	T LOW IDEE
Ref. pressure		I Pated speed now . 400
ALDA / ADA hPa		+ Rated speed rpm : 400 + rack travel mm : 5.10
Rated speed rpm	. 2000	rack travel mm : 5.10 Tolerance mm : + 0.10
	. 2000	+ Toterance mm : += 0.10
Spreed		Del. quantity
Del. quantity cm3/1000 strokes	: 40.7	- cm3/1000 strokes : 6.8
	: 40.7	Check tolerance
Tolerance cm3/1000 strokes	4.0	+ cm3/1000s. : +- 2.3
		+ Spreed
Check tolerance cm3/1000S.		+ Check tolerance
	<del></del> 2.U	- cm3/1000s. : 1.5
Spreed		<b>†</b>
Tolerance	. 25	†
cm3/1000 strokes		
Check tolerance	7.0	†
cm3/1000S.	: 3.0	†
		T
		t control lever
HICH IN E		position degree : > 47.00
HIGH IDLE		Ť
Pof procesure		T control loves
Ref. pressure		+ control lever
ALDA / ADA hPa	. 2250	position degree : < 44.50
Rated speed rpm	: 2230	†
rack travel mm Tolerance mm	: 7.70	CETTAIC PAIGINATTO FACT TALE (DLA)
	; <del>-</del> 0.23	+ SETTING PNEUMATIC FAST IDLE (PLA)
Del. quantity cm3/1000 strokes	: 25.1	+ (PLA) POSITION
	: 25.1	†
Tolerance cm3/1000 strokes		T annual laws
		t control lever
Check tolerance	70	† position degree : 14.0
cm3/1000s.	: +- 3.0	T Dated annual num
Spreed Tolerance		+ Rated speed rpm : 425
cm3/1000 strokes	. 25	I Pack traval in mr
Check tolerance		+ Rack travel in mm: 8.80
cm3/1000s.		Tolerance mm : +- 0.80
CIII37 10003.	. 3.0	+ Del. quantity
		+ cm3/1000 strokes : 22.0 + Tolerance
STARTING FUEL DELI	TVEDY	+ cm3/1000 strokes : + 3.5
STARTING FUEL DELI	IVERI	Check tolerance
Rated speed rom	. 100	T cm3/1000s + 4- / 5
rack travel	. 100 · 21 60	cm3/1000S. : + 4.5 Vacuum hPa : 400.0
Rated speed rpm rack travel mm Tolerance mm	. 21.00	T vacuum nra : 400.0
	1.70	Ţ
Del. quantity	. 50 0	T
cm3/1000 strokes	. J7.U	T
Tolerance		TECTTAIC DAISHMATTO CHUTOES ASSIST
cm3/1000 strokes	, <del></del> 4.0	† TESTING PNEUMATIC SHUTOFF DEVICE
Check tolerance	: +- 5.0	T Poted aread are
	; <del></del> 3.U	+ Rated speed rpm : 400
Spreed		+ Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 075 922T4

Injection pump

Pump designation : PES5M55C32ORS168 EP type number : 0 410 055 978

Governor

Governer design. : RSF385/2000M56-15 Governer no. : 0 420 021 272

Cust. part No. : A 40007-5922

Customer—spec. information Customer : DPICO

Motor : 0M602-2.9L

Power KW : 70.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05

Check

tclerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

: 0.80

Start of delivery blocking

°NW after s.o.d. : 15.50Tolerance : + 0.20

Check

tolerance °NW : +- 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 1.5

Tolerance cm3/1000 strokes	: 2.5	Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: 3.0	SET IDLE CONTROL LEVER POSITION
Rated speed rpm	-	Rated speed rpm : 1000
Rack travel in m	-	CRT mm max. : 1.45
Tolerance mm Del. quantity		LOW IDLE
cm3/1000 strokes Tolerance	: 8.0	LOW IDEL
cm3/1000 strokes Spreed	: <b>←</b> 0.5	control lever position degree : 14.0
Tolerance cm3/1000 strokes	: 1.0	- tolerance degree : +- 2.0
cino, rado serakes		Setting point w/out bumper spring
(B) SETTING OF IN	NJECTION PUMP	Rated speed rpm : 385 rack travel mm : 5.70
		SET IDLE AUXILIARY SPRING
IDLE STAGE		- Rated speed rpm : 500 - rack travel mm : 3.70
Rack travel in mm	n : 6.25	- Tolerance mm : + 0.10
Tolerance mm		- Load pick-up
FULL LOAD DELIVER	RY AT FULL LOAD STOP	- Rated speed rpm : 250 - rack travel mm : 12.50
Rated speed rpm Ref. pressure	: 1000	- Rated speed rpm : 1000
ALDA / ADA hPa Del. quantity	: 1100	- CRT mm max. : 1.45
cm3/1000 strokes Tolerance	: 37.5	- rack travel mm : 5.70 - Rated speed rpm : 385
cm3/1000 strokes Check tolerance		
cm3/1000s. Spreed		TORQUE CONTROL
rolerance cm3/1000 strokes	. 2.5	Rated speed rpm : 1000
heck tolerance	: 3.0	rack travel mm : 12.15 Tolerance mm : + 0.05
		Rated speed rpm : 1800
RATED SPEED	+	rack travel mm : 12.00 Tolerance mm : +- 0.10
control lever position degree	: 50.0	Rated speed rpm : 2000 rack travel mm : 11.80 Tolerance mm : + 0.10
Rated speed rpm rack travel mm	: 2250 : 7.40	Tolerance mm : +- 0.10
rack travel mm Tolerance mm	+	ADJUSTMENT TEST ADA/ALDA
Rated speed rpm rack travel mm	: 2550 : 0.50	SETTING
_		

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Rated speed rpm	: 1000	+ Rated speed rpm : 2250
Ref. pressure		+ rack travel mm : 7.40
ALDA / ADA hPa	. 0/.0	
rack travel mm		+ Del. quantity
Tolerance mm	: +- 0.70	+ cm3/1000 strokes : 24.1
		† Tolerance
MEASUREMENT		+ cm3/1000 strokes : +- 2.0
		+ Check tolerance
Rated speed rpm	. 1000	+ cm3/1000s. : $+$ 3.0
Ref. pressure	. 1000	- Consol
	000	+ Spreed
ALDA / ADA hPa		+ Tolerance
rack travel mm	: -0.40	+ cm3/1000 strokes : 2.5
Tolerance mm	: <del>+-</del> 0.10	+ Check tolerance
		+ cm3/1000s. : 3.0
Ref. pressure		
ALDA / ADA hPa	. 750	
rack travel mm		STARTING FUEL DELIVERY
		T STAKITING FUEL DELIVERI
Tolerance mm	: 0.20	
		+ Rated speed rpm : 100
		rack travel mm : 21.60
		Tolerance mm : +- 1.50
FUEL DELIVERY CHA	ARACTERISTICS	+ Del. quantity
		cm3/1000 strokes : 59.0
Ref. pressure		+ Tolerance
ALDA / ADA hPa	: 1100	
ALUA / AUA TIPA	1100	+ cm3/1000 strokes : +- 4.0
Rated speed rpm	: 1800	+ Check tolerance
Del. quantity		+ cm3/1000s. : $+$ 5.0
cm3/1000 strokes	: 40.6	+ Spreed
Tolerance		+ Tolerance
cm3/1000 strokes	: +- 0.8	+ cm3/1000 strokes : 6.0
Check tolerance	3.0	Check tolerance
	40	
cm3/1000s.	: +- 1.8	+ cm3/1000s. : 6.0
Spreed		†
Tolerance		+
cm3/1000 strckes		+
Check tolerance		+
cm3/1000s.	: 3.0	+ LOW IDLE
Ref. pressure		+ Rated speed rpm : 385
ALDA / ADA hPa	. 1100	
		+ Del. quantity
Rated speed rpm	: 2000	+ cm3/1000 strokes : 9.3
Spreed		- Check tolerance
Del. quantity		+ cm3/1000s. : $+$ 2.3
cm3/1000 strokes	: 40.7	+ Spreed
Tolerance		+ Check tolerance
cm3/1000 strokes	: <del>+</del> 1.0	+ cm3/1000s. : 1.5
Check tolerance		
cm3/1000s.	: +- 2.0	$\mathbf{I}$
	2.0	T
Spreed		
Tolerance		+
cm3/1000 strokes	: 2.5	+
Check tolerance		+
cm3/1000s.	: 3.0	+ control lever
		position degree : > 47.00
		1
		T
UTCH TOLE		l combant tours
HIGH IDLE		+ control lever
		<pre>+ control lever + position degree : &lt; 43.50</pre>
Ref. pressure		
	: 1100	

# SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever

position degree : 14.0 tolerance degree : + 2.0

Rated speed rpm : 400

Rack travel in mm : 8.60
Tolerance mm : + 0.80
Del. quantity

cm3/1000 strokes : 20.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.5

Check tolerance

cm3/1000S. : + 4.5 Vacuum hPa : 400.0

## TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 075 923T4

Injection pump

Pump designation : PES5M55C32ORS168 EP type number : 0 410 055 978

Governor

Governer design. : RSF385/2000M55-8 Governer no. : 0 420 021 269

Cust. part No. : A 40007-5923

Customer-spec. information

Customer : DPICO

Motor : 0M602-2.91 (Dom)

Power KW : 69.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : +- 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : +- 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

: 0.80

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance : +- 0.20

Check

tolerance °NW : + 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 37.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. :  $\leftarrow$  1.5

Tolerance + cm3/1000 strokes : 2.5	Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 385	Rated speed rpm : 1000
Rack travel in mm : 5.60 + Tolerance mm : +- 0.10 +	CRT mm max. : 1.45
Del. quantity cm3/1000 strokes : 8.0 Tolerance	LOW IDLE
cm3/1000 strokes : +- 0.5 Spreed Tolerance	<pre>control lever position degree : 14.0 tolerance degree : +- 2.0</pre>
cm3/1000 strokes : 1.0	Setting point w/out bumper spring Rated speed rpm : 385 rack travel mm : 5.60
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
IDLE STAGE	SET IDLE AUXILIARY SPRING  Rated speed rpm : 500
Rack travel in mm: 6.25	rack travel mm : 3.80 Tolerance mm : + 0.10
Tolerance mm : +- 0.25	Load pick-up
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 250 rack travel mm : 12.20
Rated speed rpm : 1000 FRef. pressure	Rated speed rpm : 1000
ALDA / ADA hPa : - + Del. quantity +	CRT mm max. : 1.45
<pre>cm3/1000 strokes : 37.5 Tolerance cm3/1000 strokes : + 0.5</pre>	rack travel mm : 5.60 Rated speed rpm : 385
Check tolerance cm3/1000s. : +- 1.5	
Spreed +	TORQUE CONTROL
cm3/1000 strokes : 2.5         Check tolerance cm3/1000s. : 3.0	Rated speed rpm : 1000 rack travel mm : 12.15 Tolerance mm : +- 0.05
RATED SPEED	Rated speed rpm : 1800 rack travel mm : 12.00 Tolerance mm : +- 0.10
control lever position degree : 50.0	Rated speed rpm : 2000 rack travel mm : 11.80 Tolerance mm : +- 0.10
Rated speed rpm : 2250 rack travel mm : 7.70 Tolerance mm : +- 0.25	
Rated speed rpm : 2550 rack travel mm : 0.50	FUEL DELIVERY CHARACTERISTICS

Ref. pressure		† Tolerance
ALDA / ADA hPa	: -	+ cm3/1000 strokes : +- 4.0
Rated speed rpm	: 1800	+ Check tolerance
Del. quantity		+ cm3/1000s. : + 5.0
cm3/1000 strokes	: 40.6	Spreed
Tolerance	. 40.0	+ Tolerance
cm3/1000 strokes	೧೦	- cm3/1000 strokes : 6.0
	: 0.0	
Check tolerance	4.0	+ Check tolerance
cm3/1000s.	: <del>←</del> 1.8	+ cm3/1000s. : 6.0
Spreed		†
Tolerance		<del>†</del>
cm3/1000 strokes	: 2.5	†
Check tolerance		
cm3/1000s.	: 3.0	+ LOW IDLE
		+
Ref. pressure		+ Rated speed rpm : 385
ALDA / ADA hPa	: -	+ Del. quantity
Rated speed rpm	: 2000	+ cm3/1000 strokes : 9.3
Spreed		Check tolerance
Del. quantity		cm3/1000s. : +- 2.3
cm3/1000 strokes	: 40.7	Rated speed rpm : 385  Del. quantity cm3/1000 strokes : 9.3 Check tolerance cm3/1000s. : +- 2.3 Spreed Check tolerance cm3/1000s. : 1.5
Tolerance	. 40.7	T Spreed
cm3/1000 strokes	10	+ Check tolerance + cm3/1000s. : 1.5
	; +- 1.0	+ cm3/1000s. : 1.5
Check tolerance	. 20	†
cm3/1000s.	: <del>+-</del> 2.0	†
Spreed		
Tolerance		+
cm3/1000 strokes	: 2.5	+
Check tolerance		+
cm3/1000s.	: 3.0	+ control lever
		position degree : > 47.00
		1
HIGH IDLE		∔ control lever
		position degree : < 44.50
Ref. pressure		position degree . 4 44.50
ALDA / ADA hPa		
Rated speed rpm		SETTING PNEUMATIC FAST IDLE (PLA)
rack travel mm		+ (PLA) POSITION
Tolerance mm	: +- 0.25	†
Del. quantity	25.4	†
cm3/1000 strokes	: 25.1	+ control lever
Tolerance		+ position degree : 14.0
cm3/1000 strokes	: <del>+-</del> 2.0	tolerance degree : + 2.0
Check tolerance		+
cm3/1000s.	: <del></del>	+ Rated speed rpm : 400
Spreed		+
Tolerance		Rack travel in mm : 8.50
cm3/1000 strokes	: 2.5	+ Tolerance mm : +- 0.80
Check tolerance		+ Del. quantity
cm3/1000s.	: 3.0	+ cm3/1000 strokes : 21.0
		+ Tolerance
STARTING FUEL DEL	TVERY	+ Check tolerance
STANTING FOLL DEL.	T A F (/ )	cm3/1000s. : +- 4.5
Dated around are	: 100	+ Vacuum hPa : 400.0
Rated speed rpm	· 100	T Vacuum nra : 400.0
rack travel mm	: 21.60	<b>†</b>
Tolerance mm	: <b>←</b> 1.50	†
Del. quantity	50.5	†
cm3/1000 strokes	: 59.0	+

## TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385 Vacuum hPa : -450.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.09.98 : 20.07.70 : ISO 4113 Test oil

Combination No. : 0 401 846 891

Injection pump

Pump designation : PE6P120A720RS3216 EP type number : 0 411 826 781

Governor

Governer design. : RQV300...975PA898K Governer no. : 0 421 815 197

Cust. part No. :

Customer-spec. information Customer : IVECO-UNIC : 8210.42.269 Motor

Power KW : 261.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 046

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 : +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 236.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Tolerance cm3/1000 strokes :	5.0	control lever position degree : - 1
Check tolerance cm3/1000s. :	9.0	Rated speed rpm : 1015
		Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Rated speed rpm :	300	FULL LOAD DELIVERY AT FULL LOAD ST
Rack travel in mm : Tolerance mm :		Rated speed rpm : 975
Del. quantity cm3/1000 strokes : Tolerance	20.0	Aneroid pressure hPa : 1200
cm3/1000 strokes : Check tolerance	+ 3.0	Del. quantity cm3/1000 strokes : 236.0 Tolerance
cm3/1000s. : Spreed	+ 6.0	cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes :	8.0	cm3/1000S. : +- 4.0 Spreed
Check tolerance cm3/1000s. :	12.0	Tolerance cm3/1000 strokes : 5.0
(B) SETTING OF INJE	CTTON PLIMP	Check tolerance cm3/1000s. : 9.0
WITH GOVERNOR	1	<del></del>
GUIDE SLEEVE TRAVEL		CONTROL LEVER
Rated speed rpm : guide sleeve	975	<pre>control lever position degree : 121.0 tolerance degree : +- 4.0</pre>
travel mm :	9.70 + 0.10	RATED SPEED
	300	rack travel mm : 11.80 Rated speed rpm : 1020
guide sleeve travel mm : Tolerance mm :	1.80	Tolerance 1/min : + 5  rack travel mm : 4.00
Rated speed rpm :	400	rack travel mm : 4.00 Rated speed rpm : 1100 Tolerance 1/min : +- 15
guide sleeve travel mm : Tolerance mm :	3.60 ← 0.40	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm :	750	Rated speed rpm : 1200
guide sleeve travel mm : Tolerance mm :	6.90	
Rated speed rpm :	1200	LOW IDLE
guide sleeve travel mm : Tolerance mm :	13.50	control lever position degree : 75.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	NK NK	Setting point w/out bumper spring

Rated speed rpm

100

STOP

	CRT mm min.	: > 6.00	Rated speed rpm
	Testing:		+
	Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.50 : + 0.10	Check speed 1/min Check speed 1/min
	Rated speed rpm	: 340	FUEL DELIVERY (
	TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 12.85	Aneroid pressur hPa Rated speed rpm Del. quantity
	Rated speed rpm rack travel mm Tolerance mm	: 830 : 12.50 : +- 0.10	cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance
	Rated speed rpm rack travel mm Tolerance mm		cm3/1000s.
	Rated speed rpm rack travel mm Tolerance mm	: 350 : 11.35 : + 0.15	rack travel mm Tolerance mm
(	ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressur hPa Rated speed rpm Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance
	Rated speed rpm Pressure hPa rack travel mm Folerance mm	: 975 : 1200 : 12.85 : + 0.05	Check tolerance cm3/1000s.
F	Rated speed rpm Pressure hPa rack travel mm Folerance mm	: 975 : - : 9.70 : + 0.10	STARTING FUEL D  Rated speed rpm Del. quantity cm3/1000 stroke
١	MEASUREMENT		Tolerance cm3/1000 stroke
F	Rated speed rpm	: 975	Check tolerance cm3/1000s.
r	Pressure hPa Pack travel mm Tolerance mm	: 400 : 10.20 : + 0.10	
F	Pressure hPa	: 600 -	LOW IDLE
r	rack travel mm Tolerance mm	: 11.45 - : +- 0.05 -	Rated speed rpm Rack travel in
5	Start interlock	-	Tolerance mm

Rated speed rpm Rated speed rpm	: > 100 : < 240
Check speed 1/min Check speed 1/min	: > 80 : < 260
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1200 : 500 : 191.0 : + 3.0 : + 6.0
rack travel mm Tolerance mm	: 11.40 : + 0.10
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 132.0 : + 1.0 : + 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm	: 4.50 : +- 0.10

Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 23.09.98 Edition Test oil : ISO 4113

Combination No. : 0 402 670 814

Injection pump

Pump designation : PE12P120A320LS7925 EP type number : 0 412 620 852

Governor

Governer design. : RSV375...95DPOA692 Governer no. : 0 421 833 614

Cust. part No. : 0 270 740 702

Customer-spec. information Customer : MB-NFZ : OM 444 LA Motor Power KW : 493.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar :  $\leftarrow$  0.1

Overflow quantity
min. L/h : 160
Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345 : +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 930

		† <u></u>
Rack travel in mm : Tolerance mm	: 13.50 : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 930
Del. quantity cm3/1000 strokes	228.0	Aneroid pressure  + hPa : 1200  - Del. quantity
Tolerance cm3/1000 strokes	: <del>+</del> 1.0	- cm3/1000 strokes : 228.0 - Tolerance - cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s.	+ 4.0	Check tolerance - cm3/1000s. : +- 4.0 - Spreed
Spreed		+ Tolerance
Tolerance cm3/1000 strokes :	5.0	- cm3/1000 strokes : 5.0 - Check tolerance - cm3/1000s. : 9.0
Check tolerance cm3/1000s. :	9.0	
		+ CONTROL LEVER
Rated speed rpm :	375	control lever position degree : 91.0 tolerance degree : + 4.0
	5.00 +- 0.10	+
Del. quantity cm3/1000 strokes :	19.0	+ ASSEMBLY GOVERNOR SETTING +
Tolerance cm3/1000 strokes :	<b>←</b> 3.0	+ Rated speed rpm : 978 + rack travel mm : 12.50
Spreed	← 6.0	Rated speed rpm : 1048 Tolerance 1/min : +- 4
Tolerance cm3/1000 strokes :	8.0	+ rack travel mm : 4.00
Check tolerance cm3/1000s. :	12.0	+ rack travel mm : 0.85 + Tolerance mm : + 0.55 + Rated speed rpm : 1350
(B) SETTING OF INJE	CTION PUMP	‡
WITH GOVERNOR		Rated speed rpm : 979 rack travel mm : 12.50
GUIDE SLEEVE POSITION	ON	Rated speed rpm : 1049 Tolerance 1/min : + 4 rack travel mm : 4.00
control lever position degree : Rated speed rpm :	- 3 800	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1350
Rack travel in mm : Tolerance mm :		Rated speed rpm : 980 rack travel mm : 12.50
governor spring pre-tension click setting x :	3.75	Rated speed rpm : 1050 Tolerance 1/min : + 4 rack travel mm : 4.00

rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1350
Rated speed rpm rack travel mm	: 9 <b>8</b> 1 : 12.50
Rated speed rpm rack travel mm	: 1051 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1350
Rated speed rpm rack travel mm	: 982 : 12.50
Rated speed rpm Tolerance 1/min rack travel mm	: 1052 : +- 4 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1350
rack travel mm	: 12.50
rack travel mm	: 4.00
rack travel mm Tolerance mm	: 0.85 : +- 0.55
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 8.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
SET IDLE AUXILIAR	Y SPRING
Rated speed rpm rack travel mm	: 410 : 2.00

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 930 : 13.50 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 13.50 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 13.50 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.90 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.70 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 450 : 9.60 : ← 0.05
FUEL DELIVERY CHA	RACTERISTICS

Aneroid pressure hPa Rated speed rpm	:		200 300
Del. quantity	•		
cm3/1000 strokes Tolerance	:	ā	242.0
cm3/1000 strokes Check tolerance	:	+	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes Check tolerance	:		8.0
cm3/1000s.	:		12.0

Aneroid pressure		
hPa	:	_
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	142.0
Tolerance		
cm3/1000 strokes	: 1	<b>⊢</b> 1.0
Check tolerance		
cm3/1000s.	: 1	<b>-</b> 4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	•	240.0
Tolerance cm3/1000 strokes	•	- 15.0
Check tolerance	, т	
cm3/1000s.	: +	- 19.0

# LOW IDLE

Rated speed rpm	:		375	
100000000000000000000000000000000000000			5.00 0.10	
Del. quantity cm3/1000 strokes Tolerance	:		19.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:		12.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25.09.98 : ISO 4113

Combination No. : 0 402 716 805

Injection pump

Pump designation : PES6P120A700LS7442

EP type number : 0 412 726 972

Governor

Governer design. : Governer no. :

Cust. part No. : 0280743902

Customer-spec. information Customer : MTU

Motor : 6R183-02 Power KW : 369.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity

min. l/h : 240
Tolerance l/h : + 20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

har

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 075

Out: ide diameter : 8.0

x inside diameter :

3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.35 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : \_6- 2- 4- 1- 5-

: 3

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Barrel no. : 6

## BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 7.80 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes	: 184.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	9.0
Rated speed rpm	300
Rack travel in mm :	4.10 + 0.20
Del. quantity cm3/1000 strokes :	18.0
	+- 3.0
Check tolerance cm3/1000s.	+- 6.0
Spreed Tolerance	0.0
cm3/1000 strokes : Check tolerance	
cm3/1000s. :	12.0
(B) SETTING OF INJE	ECTION PUMP
FULL LOAD DELIVERY	AT FULL LOAD STOP
Rated speed rpm :	750
Aneroid pressure hPa :	••
Del. quantity cm3/1000 strokes :	184.0
Tolerance cm3/1000 strokes :	+ 1.0
Check tolerance cm3/1000s. :	<b>←</b> 4.0
Spreed Tolerance	
cm3/1000 strokes : Check tolerance	5.0
cm3/1000s. :	9.0

Testing:			
Rated speed rpm rack travel mm Tolerance mm	: : +-	300 4.10 0.20	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: +-	750 7.80 0.05	
LOW IDLE	·		
LOW IDLE Rated speed rpm	:	300	
Rated speed rpm Rack travel in mm Tolerance mm		300 4.10 0.20	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +-	4.10	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: +-	4.10 0.20	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +-	4.10 0.20 18.0 3.0	
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- : +-	4.10 0.20 18.0 3.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.06.94 : ISO 4113

Combination No. : 0 400 074 883

Injection pump

Pump designation : PES4M60C320RS185 EP type number : 0 410 064 006

Governor

Governer design. : RSF375/1900M78 Governer no. : 0 420 021 274

Cust. part No. :

Customer-spec. information

Customer : MB-PKW Motor

: 0M601 D23 LA

Power KW

: 72.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C 40 Tolerance °C : <del>+-</del> 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

### **REMARKS**

(A)	INJECTION PUMP	SETTING	<b>VALUES</b>
Set	equal delivery	quant.	
per	values		

### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 0.20

: +- 0.30 Prestroke mm

Check

: 12 tolerance mm

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 05.10.98 : ISO 4113

Combination No. : 0 400 816 002

Injection pump

Pump designation : PES6A90D400RS2821 EP type number : 0 410 896 092

Governor

Governer design. : Governer no.

Cust. part No. : 112122

Customer-spec. information

Customer : IVECO-AIFO : 8061 SRM 25 Motor

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.25 : +- 0.05 Tolerance mm

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm: 10.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 58.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.	: 7.0
Rated speed rpm	: 300
Del. quantity cm3/1000 strokes	: 13.0
Tolerance	. 15.0
cm3/1000 strokes	: <del></del> 2.0
Check tolerance cm3/1000s.	: <del></del> 4.0
Spreed	. , 4.0
Tolerance	
cm3/1000 strokes Check tolerance	: 4.5
cm3/1000s.	: 7.0
	· · -
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP

FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1500
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 58.0
Tolerance
cm3/1000 strokes : +- 0.5
Check tolerance
cm3/1000s. : + 2.5
Spreed
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000s. : 7.0

TORQUE CONTROL	
Rated speed rpm	: 1500
rack travel mm	: 10.05
Tolerance mm	: +- 0.05

STARTING	<b>FUEL</b>	DELIVE	ERY
----------	-------------	--------	-----

Rated speed rpm : 100 rack travel mm : 16.20 Tolerance mm :  $\leftarrow$  0.20

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100.0 : +- 7.5 : +- 10.0
LOW IDLE	
Rated speed rpm Del. quantity	: 300
cm3/1000 strokes Tolerance	: 13.0
cm3/1000 strokes	: <b>←</b> 2.0
Check tolerance cm3/1000S. Spreed	: +- 4.0

End of test specification sheet

Tolerance cm3/1000 strokes : 4.5

Check tolerance cm3/1000s. : 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.10.98 Test oil : ISO 4113

Combination No. : 0 400 836 036

Injection pump

Pump designation : PES6A85D410/3RS2761

EP type number : 0 410 886 895

Governor

Governer design. : RQV300...1250AB1188

: -1L

Governer no. : 0 420 212 205

Cust. part No. :

Customer-spec. information Customer : KHD Motor : BF6L913 : 118.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter :

x Length mm : 600

2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 : **←** 0.50

Tolerance Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s.

: ← 2.5

**B17** 

Spreed	
Tolerance cm3/1000 strokes	: 3.0
Check tolerance cm3/1000s.	: 7.0
Rated speed rpm	: 300
Rack travel in mo Tolerance mm Del. quantity	n: 7.80 : +- 0.10
cm3/1000 strokes	: 13.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 4.5
Check tolerance cm3/1000s.	: 7.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE TRAV	/EL
Rated speed rpm guide sleeve	: 1303
travel mm Tolerance mm	: 8.86 : +- 0.15
Rated speed rpm guide sleeve	: 300
travel mm Tolerance mm	: 1.29 : +- 0.20
Rated speed rpm guide sleeve	: 850
travel mm Tolerance mm	: 4.97 : + 0.25
Rated speed rpm	: 1520
guide sleeve travel mm	: 11.50

travel mm Tolerance mm	: 4.97 : + 0.25	
Rated speed rpm guide sleeve	: 1520	
travel mm	: 11.50	
Tolerance mm	: +- 0.50	
GUIDE SLEEVE POSITION		
control lever		

control lever position degree : -1 Rated speed rpm : 1344 Rack travel in mm : 11.35 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250 Aneroid pressure : 700 hPa Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes :  $\leftarrow$  0.5 Check tolerance cm3/1000s. : +- 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance : 7.0 cm3/1000s.

## CONTROL LEVER

control lever position degree : 122.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1295 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 1385
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

# LOW IDLE

control lever position degree : 69.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

200

Rated speed rpm : CRT mm min. : > 7.89

Testing:

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm	: 7.80 : +- 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1250 : 12.35 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 13.15 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 820 : 12.90 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 12.90 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 11.35 : ← 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 350 : 11.70 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min Check	: > 80
speed 1/min	: < 240

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	•	+-	700 750 12.90 0.10 89.5 1.5
Aneroid pressure hPa	:		

hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 63.0
Tolerance
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000s. : + 2.5

# STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

Rated speed rpm	: 100
rack travel mm	: 17.20
Tolerance mm	: <b>←</b> 0.20
Del. quantity	
cm3/1000 strokes	: 125.0
Tolerance	
cm3/1000 strokes	: +- 7.5
Check tolerance	
cm3/1000s.	: +- 10.0

# LOW IDLE

Rated speed rpm	:		300
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	:	+	7.80 0.10 13.0

Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.5
Check tolerance		
cm3/1000s.	:	7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16.02.98 : ISO 4113

Combination No. : 0 402 746 617

Injection pump

Pump designation : PES6P120A720RS7423 EP type number : 0 412 726 963

Governor

Governer design. : RQV325...975PA909

: -12K

Governer no. : 0 421 815 531

Cust. part No. : 313GC5229-P10

Customer-spec. information Customer : MACK Motor : EN7300A

Power KW

: 223.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : **←** 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 202.0

	<del></del>	- Rated speed rpm : 1430
Tolerance	1.0	- guide sleeve
cm3/1000 strokes	: - 1.0	- travel mm : 13.50 - Tolerance mm : +- 0.50
Chock tolerance		- Toterance min ; +- 0.50
	: +- 4.0	
	<u> </u>	- FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	+	•
- 1	†	- Rated speed rpm : 975
Tolerance cm3/1000 strokes	. 50	- Aneroid pressure - hPa : 1200
Chor tood strokes	. 5.0	- hPa : 1200 - Del. quantity
Check tolerance		- cm3/1000 strokes : 202.0
cm3/1000s.	: 9.0	Tolerance
		- cm3/1000 strokes : +- 1.0
	+	Check tolerance
Datad anded non	. 725	- cm3/1000s. : +- 4.0
Rated speed rpm	: 325	Spreed Tolerance
Rack travel in mm	· 5.30	cm3/1000 strokes : 5.0
Tolerance mm		Check tolerance
Del. quantity	+	cm3/1000s. : 9.0
cm3/1000 strokes	: 44.0 <del> </del>	•
Tolerance		
cm3/1000 strokes Check tolerance	: <del>+</del> 3.0 †	CONTROL LEVER
	: ← 5.0 <sup>‡</sup>	CONTROL LEVER
Spreed	1	control lever
Tolerance	<del>1</del>	position degree : 106.0
cm3/1000 strokes	: 8.0 <del> </del>	tolerance degree : +- 4.0
Check tolerance	+	
cm3/1000S.	: 12.0 +	RATED SPEED
	Ī	rack travel mm : 11.60 Rated speed rpm : 1020
(B) SETTING OF INJE	ECTION PUMP	Tolerance 1/min : +- 5
WITH GOVERNOR	1	Check
	+	speed 1/min : +- 10
CHIEF OF FEMALES	+	4.00
GUIDE SLEEVE TRAVEL	-	rack travel mm : 4.00 Rated speed rpm : 1175
Rated speed rpm :	: 1030	Rated speed rpm : 1175 Tolerance 1/min : +- 15
guide sleeve		Check
travel mm :	8.84	speed 1/min : + 20
Tolerance mm :	: +- 0.15 +	
Datad annud nom .	725	rack travel mm : 0.50
Rated speed rpm : guide sleeve	325	Tolerance mm : +- 0.50 Rated speed rpm : 1250
travel mm :	1.27	rated speed (pill . 1230
Tolerance mm :	+ 0.20	
	+	
Rated speed rpm :	524 +	
guide sleeve	7 70	LOW IDLE
travel mm : Tolerance mm :	3.30 + + 0.25 +	
TOTE OF THE STATE OF	İ	control lever
Rated speed rpm :	390	position degree : 61.5
guide sleeve	+	tolerance degree : + 4.0
travel mm :	2.30	
Tolerance mm :	→ 0.25	Setting point w/out bumper spring
	+	

Rated speed rpm	: 275	+
CRT mm min.	. > 6.50	+ Check + speed 1/min :> 80
CIXI IND BILLI.	. > 0.50	Check
Testing:		speed 1/min : < 285
Rated speed rpm	: 325	
rack travel mm Tolerance mm	: 5.30	+ FUEL DELIVERY CHARACTERISTICS
Tolerance mm	: +- 0.70	<u> </u>
Rated speed rpm	: 400	Aneroid pressure
,		→ hPa · 1200
·		Rated speed rpm : 600
TORQUE CONTROL	075	+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 221.5
rack travel mm	: 12.55	† Tolerance
Tolerance mm	: +- 0.05	- cm3/1000 strokes : +- 3.0
Rated speed rpm	. 600	+ Check tolerance + cm3/1000s. : +- 6.0
rack travel mm	. 12.00	- Spreed
Tolerance mm	: +- 0.10	+ Tolerance
		+ cm3/1000 strokes : 8.0
Rated speed rpm	: 500	+ Check tolerance
rack travel mm	: 11.50	+ cm3/1000s. : 12.0
Rated speed rpm rack travel mm Tolerance mm	: <del>+-</del> 0.20	<del>}</del>
ANEROID/ALTITUDE		† Tolerance mm : + 0.20
COMPENSATOR TEST		†
		Aneroid pressure
SETTING		+ hPa : -
02112.10		Rated speed rpm : 400
Rated speed rpm	: 975	+ Del. quantity
Pressure hPa	: 1200	+ cm3/1000 strokes : 148.0
rack travel mm	: 12.55	+ Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : +- 2.0
5	075	+ Check tolerance
Rated speed rpm Pressure hPa	: 975	+ cm3/1000s. : +- 4.0
	. – : 8.10	†
rack travel mm Tolerance mm	: 8.10 : +- 0.20	I
10 CCI GITCE THIII	0.20	STARTING FUEL DELIVERY
MEASUREMENT		+
		+ Rated speed rpm : 100
Rated speed rpm	: 975	+ rack travel mm : 10.80
	440	Tolerance mm : +- 1.00
Pressure hPa	: 460	+ Del. quantity
rack travel mm Tolerance mm	: 11.15 : + 0.20	+ cm3/1000 strokes : 205.0
rocerance iniii	: 0.20	+ Tolerance + cm3/1000 strokes : +- 20.0
Pressure hPa	: 235	Check tolerance
rack travel mm	9.25	+ cm3/1000s. : + 30.0
Tolerance mm	: <del>+-</del> 0.05	+
		+
		+
Start interlock		†
Datad anard	. \ 100	+ LOW IDLE
Rated speed rpm Rated speed rpm	: > 100 : < 275	Pated speed now : 725
rated speed rpm	. \ (1)	+ Rated speed rpm : 325

Rack travel in mm Tolerance mm	: : +-	5.30 0.10
Del. quantity cm3/1000 strokes Tolerance	:	44.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s.	: +-	5.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.06.98 : ISO 4113

Combination No. : 9 400 030 734CA

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV500...1100A0c847R

Governer no. : 9 420 034 713

Cust. part No. : 3933290

Customer—spec. information Customer : CDC Motor : 4BT3.9 Power KW : 74.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 2.45 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-3-4-2

Phasing Phasing Tolerance : 0-90-180-270

: +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.55 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 107.5	+ Tolerance + cm3/1000 strokes : + 1.0 + Check tolerance
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000s. : +- 3.0 + Spreed
Check tolerance cm3/1000s. : +- 3.0	Tolerance cm3/1000 strokes : 3.5 Check tolerance
Spreed	+ cm3/1000s. : 6.0
Tolerance cm3/1000 strokes : 3.5	RATED SPEED rack travel mm : 11.50 Rated speed rpm : 1165
Check tolerance cm3/1000s. : 6.0	Tolerance 1/min : +- 5
	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55 + Rated speed rpm : 1375
Rated speed rpm : 500	† t. t
Rack travel in mm : 5.55 Tolerance mm : + 0.10 Del. quantity	+ rack travel mm : 6.00 + Rated speed rpm : 1230 + Tolerance 1/min : +- 15
cm3/1000 strokes : 20.5 Tolerance	
cm3/1000 strokes : $+-$ 2.0	
Check tolerance cm3/1000s. : +- 4.5	+ LOW IDLE
Spreed	Control lever difference
Tolerance	- Grad : 20.0
cm3/1000 strokes : 3.5 Check tolerance	tolerance degree : +- 6.0
cm3/1000s. : 5.5	Setting point w/out bumper spring
	Rated speed rpm : 500
(B) SETTING OF INJECTION PUMP	+ rack travel mm : 5.05
WITH GOVERNOR	Tolerance mm : + 0.10
	Testing:
GUIDE SLEEVE POSITION	Rated speed rpm : 500
	rack travel mm : 5.55
	Tolerance mm : +- 0.10
control lever position degree : - 3	<u> </u>
position degree : - 3	TORQUE CONTROL
governor spring	+ Rated speed rpm : 1100
pre-tension	rack travel mm : 12.55
click setting $x$ : 3.25	+ Tolerance mm : +- 0.05
	Rated speed rpm : 750
FULL LOAD DELIVERY AT FULL LOAD STOP	+ rack travel mm : 13.50
Rated speed rpm : 1100	+ Tolerance mm : + 0.10 +
Aneroid pressure	ANDROTE (A) TITLE
hPa : 1000 Del. quantity	+ ANEROID/ALTITUDE + COMPENSATOR TEST
cm3/1000 strokes : 107.5	+ CONFENSATOR TEST
· · · · · · · · · · · · · · · · · · ·	· ·

## SETTING

Rated speed rpm	:	750
Pressure hPa	:	1000

Rated speed rpm : 750
Pressure hPa : rack travel mm : 11.90
Tolerance mm : + 0.10

## **MEASUREMENT**

Rated speed rpm : 750

Pressure hPa : 440 rack travel mm : 12.40 Tolerance mm : + 0.20

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 119.5
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance

: +- 4.0

cm3/1000s.

Aneroid pressure
hPa : Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 96.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 122.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 15.0

### LOW IDLE

Rated speed rpm	:	500	
1001 41100 11111	: +-	5.55 0.10	
Del. quantity cm3/1000 strokes Tolerance	:	20.5	
cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000s. Spreed	: +-	4.5	
Tolerance cm3/1000 strokes Check tolerance	:	3.5	
cm3/1000s.	:	5.5	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06,10,98 Edition : ISO 4113 Test oil

Combination No. : 0 400 075 920

Injection pump

Pump designation : PES5M55C32ORS189 EP type number : 0 410 055 953

Governor

Governer design. : RSF385/2000M83 Governer no. : 0 420 021 284

Cust. part No. :

Customer-spec. information Customer : DPICO

: 0M 602 2,9ltr Motor

Power KW : 70.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

rrestroke mm : +-2.05 : ← 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : +- 1.00

Firing order : 1-2-4-5-3

: 0-72-144-216-288 Phasing

> 0.80 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50 : +- 0.20 Tolerance

Check

tolerance °NW : + 0.30

: 1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 38.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s.

: +- 1.5

Spreed

Tolerance cm3/1000 strokes : 2.5	+ Tolerance mm :
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL LE
Rated speed rpm : 385	Rated speed rpm :
Rack travel in mm : 5.90	CRT mm max. :
Tolerance mm : + 0.10	
Del. quantity cm3/1000 strokes : 9.5	+ LOW IDLE
Tolerance	<b>‡</b>
cm3/1000 strokes : + 0.5	control lever
Spreed Tolerance	<pre>position degree :    tolerance degree :</pre>
cm3/1000 strokes : 1.0	+
	Setting point w/out
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : + rack travel mm :
WITH GOVERNOR	SET IDLE AUXILIARY
IDLE STAGE	Rated speed rpm :
	+ rack travel mm :
Rack travel in mm : 6.25	+ Tolerance mm :
Tolerance mm : + 0.15	Load pick-up
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : rack travel mm :
Rated speed rpm : 1000	Rated speed rpm :
Ref. pressure	+
ALDA / ADA hPa : 1100 Del. quantity	CRT mm max. :
cm3/1000 strokes : 38.0	rack travel mm :
Tolerance cm3/1000 strokes : +- 0.5	Rated speed rpm :
Check tolerance	Ī
cm3/1000s. : + 1.5	
Spreed Tolerance	TORQUE CONTROL
cm3/1000 strokes : 2.5	Rated speed rpm :
Check tolerance cm3/1000s. : 3.0	+ rack travel mm : + Tolerance mm :
ciii3/10003 3.0	+ Toterance iiiii :
D	Rated speed rpm :
RATED SPEED	+ rack travel mm : + Tolerance mm :
	13001 41100 11111
control lever position degree : 50.0	ADJUSTMENT TEST ADA/
Rated speed rpm : 2250	SETTING
rack travel mm : 7.60	+ SELLTING
Tolerance mm : +- 0.25	Rated speed rpm :
Rated speed rpm : 2550	+ Ref. pressure + ALDA / ADA hPa :
rack travel mm : 0.50	+ rack travel mm :

EVER POSITION 1000 1.45 12.5 +- 2.0 bumper spring 385 5.90 SPRING 500 4.00 + 0.10 250 13.00 1000 1.45 5.90 385 1000 12.15 + 0.05 2000 12.15 +- 0.10 /ALDA 1000 940 + rack travel mm : −0.10

+- 0.50

Tolerance mm	: +- 0.10	+ Tolerance mm	: +- 1.50
MEASUREMENT		+ Del. quantity + cm3/1000 strokes	: 60.3
Pated speed rom	: 1000	+ Tolerance + cm3/1000 strokes	
Rated speed rpm Ref. pressure		+ Check tolerance	
ALDA / ADA hPa rack travel mm	: 900	- cm3/1000s.	: <del>+-</del> 5.0
rack travel mm Tolerance mm	: -0.40 : +- 0.10	+ Spreed + Tolerance	
	, , , , , ,	cm3/1000 strokes	
Ref. pressure ALDA / ADA hPa	. 750	+ Check tolerance + cm3/1000s.	: 6.0
rack travel mm	: -1.50	1 (1113) (10003).	. 0.0
Tolerance mm	: +- 0.20	+	
		Ī	
FUEL DEL TUEDY CU	ADACTEDICTICS	+ LOW IDLE	
FUEL DELIVERY CH	AKACIEKT21162	Rated speed rpm	: 385
Ref. pressure		rack travel mm	: 5.90
ALDA / ADA hPa	: 1100	rack travel mm Tolerance mm	: +- 0.10
Rated speed rpm	: 2000	+ Del. quantity	
Del. quantity		+ cm3/1000 strokes	
cm3/1000 strokes	: 47.5	+ Check tolerance	
Tolerance cm3/1000 strokes	. + 10	+ cm3/1000s. + Spreed	: +- 2.3
Check tolerance		+ Spreed + Check tolerance	
cm3/1000s.	: +- 2.0	cm3/1000s.	: 1.5
Spreed		1	
Tolerance		+	
cm3/1000 strokes			
Check tolerance		+	
cm3/1000s.	: 3.0	Ī	
		control lever	
11201 2012		+ position degree	: > 47.00
HIGH IDLE		1	
Ref. pressure		control lever	
ALDA / ADA hPa		+ position degree	: < 43.50
Rated speed rpm		†	
rack travel mm		CETTAIC DAIGINAATTO	C EAST TOLE (DIA)
Tolerance mm Del. quantity	: +- 0.25	+ SETTING PNEUMATION - (PLA) POSITION	, PAST IDLE (PLA)
cm3/1000 strokes	: 24.5	T CLEAN LOSTITON	
Tolerance	· 67.3	1	
cm3/1000 strokes	: +- 2.0	+ control lever	
Check tolerance		position degree	
cm3/1000s.	: <del>←</del> 3.0	tolerance degree	: +- 2.0
Spreed		† _	400
Tolerance	. 3.5	+ Rated speed rpm	: 400
cm3/1000 strokes Check tolerance	: 2.5	+ → Rack travel in mm	
cm3/1000s.	: 3.0	Tolerance mm	
31137 TOOUS.	. J.U	+ Del. quantity	0.00
		- + cm3/1000 strokes	: 22.5
STARTING FUEL DEL	_IVERY	Tolerance	<del></del>
		+ cm3/1000 strokes	: +- 3.5
Rated speed rpm		+ Check tolerance	
rack travel mm	: 21.60	+ cm $3/1000$ s.	: +- 4.5

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385 Vacuum hPa : -450.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 075 920T4

Injection pump

Pump designation : PES5M55C32ORS189 EP type number : 0 410 055 953

Governor

Governer design. : RSF385/2000M83 Governer no. : 0 420 021 284

Cust. part No. : A 40007-5920

Customer—spec. information Customer : DPICO

Motor : 0M 602 2,9ltr

Power KW : 70.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

: 0.80

Start of delivery blocking

\*NW after s.o.d. : 15.50 Tolerance : + 0.20

Check

tolerance °NW : +- 0.30

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s.

: <del>+-</del> 1.5

Spreed

Tolerance cm3/1000 strokes	: 2.5	‡
Check tolerance cm3/1000s.	: 3.0	<del> </del>
Rated speed rpm	: 385	Ŧ
Rack travel in mm Tolerance mm Del. quantity	: 5.90 : +- 0.10	Ī
cm3/1000 strokes	: 8.5	Ţ
Tolerance cm3/1000 strokes Spreed	: ← 0.5	Ī
Tolerance cm3/1000 strokes	: 1.0	+
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	+ + + + + + + + + + + + + + + + + + + +
IDLE STAGE		‡
Rack travel in mm Tolerance mm	: 6.25 : +- 0.15	† † †
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	+
Rated speed rpm	: 1000	‡
Ref. pressure ALDA / ADA hPa	: 1100	‡
Del. quantity cm3/1000 strokes	: 37.0	‡
Tolerance cm3/1000 strokes	: +- 0.5	‡
Check tolerance cm3/1000S.	: +- 1.5	‡
Spreed Tolerance		‡
cm3/1000 strokes Check tolerance	: 2.5	<u>†</u>
cm3/1000s.	: 3.0	1
RATED SPEED		+++++++++++++++++++++++++++++++++++++++
control lever		+
position degree	: 50.0	†
position degree Rated speed rpm rack travel mm Tolerance mm	: 50.0 : 2250 : 7.60 : + 0.25	+ + + + + + + + + + + + + + + + + + + +

	. ,
SET IDLE CONTROL	LEVER POSITION
Rated speed rpm	: 1000
CRT mm max.	: 1.45
OW IDLE	
control lever position degree colerance degree	: 12.5 : +- 2.0
etting point w/c lated speed rpm lack travel mm	out bumper spring : 385 : 5.90
ET IDLE AUXILIAR	RY SPRING
ated speed rpm ack travel mm olerance mm	: 500 : 4.00 : + 0.10
oad pick-up	
ated speed rpm ack travel mm	: 250 : 13.00
ated speed rpm	: 1000
RT mm max.	: 1.45
ack travel mm ated speed rpm	: 5.90 : 385
ORQUE CONTROL	
ated speed rpm ack travel mm olerance mm	: 1000 : 12.15 : +- 0.05
ated speed rpm ack travel mm olerance mm	: 2000 : 12.15 : +- 0.10
DJUSTMENT TEST A	DA/ALDA
ETTING	
ated speed rpm ef. pressure LDA / ADA hPa ack travel mm	

Tolerance mm : + 0.50

Tolerance mm	: +- 0.10	† Tolerance mm : + 1.50
MEASUREMENT		+ Del. quantity + cm3/1000 strokes : 60.3
Rated speed rpm	. 1000	Tolerance + cm3/1000 strokes : +- 4.0
Pef pressure		+ Check tolerance
ALDA / ADA hPa		+ cm3/1000s. : +- 5.0
rack travel mm Tolerance mm	: -0.40 : +- 0.10	+ Spreed + Tolerance
		+ cm3/1000 strokes : 6.0
Ref. pressure ALDA / ADA hPa	: 750	+ Check tolerance + cm3/1000S. : 6.0
rack travel mm	: <del>-</del> 1.50	+ 0.0
Tolerance mm	: +- 0.20	+
		Ţ
FUEL DELIVERY CHA	ARACTERISTICS	+ LOW IDLE
		Rated speed rpm : 385
Ref. pressure	4400	+ rack travel mm : 5.90 + Tolerance mm : + 0.10
ALDA / ADA hPa		
Rated speed rpm Del. quantity	: 2000	Del. quantity
cm3/1000 strokes	: 41.3	+ Check tolerance
Tolerance		+ cm3/1000s. : +- 2.3
cm3/1000 strokes		+ Spreed
Check tolerance		+ Check tolerance
:m3/1000s. Spreed	: +- 2.0	† cm3/1000s. : 1.5
opreed Tolerance		Ţ
cm3/1000 strokes	: 2.5	<u> </u>
Check tolerance		+
cm3/1000s.	: 3.0	<u>†</u>
		control lever
HIGH IDLE		position degree : > 47.00
		+ control lover
Ref. pressure ALDA / ADA hPa	: 1100	+ control lever + position degree : < 43.50
Rated speed rpm		+ posteroit degree . \ 45.50
rack travel mm	: 7.60	+
Tolerance mm	: <del>+-</del> 0.25	SETTING PNEUMATIC FAST IDLE (PLA)
Del. quantity	: 24.1	(PLA) POSITION
m3/1000 strokes Tolerance	. 24.1	I
cm3/1000 strokes	: +- 2.0	control lever
Check tolerance		position degree : 12.5
m3/1000s.	: <del></del>	tolerance degree : + 2.0
preed olerance		Pated speed non . /00
m3/1000 strokes	: 2.5	+ Rated speed rpm : 400
heck tolerance	. 2.3	Rack travel in mm : 8.90
m3/1000s.	: 3.0	+ Tolerance mm : +- 0.80
		Del. quantity
TARTING CUEL ACT	TUEDY	+ cm3/1000 strokes : 21.5
STARTING FUEL DEL	TAFKI	+ Tolerance + cm3/1000 strokes : +- 3.5
ated speed rpm	: 100	+ Check tolerance
		cm3/1000s. : +- 4.5
ack travel mm	: 21.60	1 00000: 1.1

Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385 Vacuum hPa : -450.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 06,10,98 : ISO 4113

Combination No. : 0 400 075 921

Injection pump

Pump designation : PES5M55C32ORS189 EP type number : 0 410 055 953

Governor

Governer design. : RSF385/2000M81

Governer no. : 0 420 021 282

Cust. part No. :

Customer-spec. information

Motor

Customer : DPICO

: OM 602 2,9ltr

Power KW

: 70.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

40

Tolerance °C

: <del>+-</del> 2.0

Overflow valve

: 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly

: 1 688 901 111

Opening pressure

bar

: 148.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

**CO8** 

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : +- 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288

: 0.80 1.00

## Start of delivery blocking

°NW after s.o.d. : 15.50 : +- 0.20 Tolerance

Check

: +- 0.30 tolerance °NW

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes :

38.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s.

: + 1.5

Spreed

Tolerance cm3/1000 strokes : 2.5	Tolerance mm	: +- 0.50
Check tolerance cm3/1000s. : 3.0	SET IDLE CONTROL	
Rated speed rpm : 385	Rated speed rpm	
Rack travel in mm : 5.90 Tolerance mm : + 0.10 Del. quantity	CRT mm max.	. 1.45
cm3/1000 strokes : 9.5 Tolerance	1	
cm3/1000 strokes : +- 0.5 Spreed Tolerance	control lever position degree tolerance degree	
cm3/1000 strokes : 1.0	Setting point w/c	out bumper spi
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm rack travel mm	
WITH GOVERNOR	SET IDLE AUXILIAR	Y SPRING
IDLE STAGE	Rated speed rpm rack travel mm Tolerance mm	: 4.00
Rack travel in mm : 6.25 Tolerance mm : +- 0.25	Load pick-up	
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm rack travel mm	: 250 : 12.00
Rated speed rpm : 1000 Ref. pressure	Rated speed rpm	: 1000
ALDA / ADA hPa : - Del. quantity	CRT mm max.	: 1.45
cm3/1000 strokes : 38.0 Tolerance	rack travel mm Rated speed rpm	
cm3/1000 strokes : + 0.5 Check tolerance	†	
cm3/1000S. : +- 1.5 Spreed Tolerance	TORQUE CONTROL	
cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0	Rated speed rpm rack travel mm Tolerance mm	
RATED SPEED	Rated speed rpm	: 2000
control lever	rack travel mm Tolerance mm	: +- 0.10
position degree : 50.0		<del> </del>
Rated speed rpm : 2250 rack travel mm : 7.60 Tolerance mm : +- 0.25	+ FUEL DELIVERY CHAP + Ref. pressure	RACTERISTICS
Rated speed rpm : 2550 rack travel mm : 0.50	ALDA / ADA hPa Rated speed rpm	

NTROL LEVER POSITION rpm : 1000 : 1.45 er egree : 14.0 degree : +- 2.0 nt w/out bumper spring rpm : 385 mm : 5.90 XILIARY SPRING 1 rpm : 500 .mm : 4.00 mm : + 0.10 p rpm : 250 mm : 12.00 : 1000 rpm 1.45 : 5.90 : mm rpm : 385 ROL rpm : 1000 mm : 12.15 m : + 0.05 rpm : 2000 mm : 12.15 m : + 0.10 RY CHARACTERISTICS re hPa : -rpm : 2000

Del. quantity		+ Check tolerance
cm3/1000 strokes		cm3/1000s. : +- 2.3
	. 41.3	_
Tolerance		Spreed
cm3/1000 strokes		+ Check tolerance
Check tolerance		+ cm3/1000s. : 1.5
cm3/1000s.	: +- 2.0	+
Spreed		1
Tolerance		
cm3/1000 strokes	. 25	T
		Ť
Check tolerance		†
cm3/1000s.	: 3.0	+
		+ control lever
		position degree : > 47.00
	<del></del>	
HIGH IDLE		1
112017 2022		→ control lever
Ref. pressure		position degree : < 44.50
	•	T position degree : < 44.50
ALDA / ADA hPa	2250	†
Rated speed rpm	: 2250	
rack travel mm		+ SETTING PNEUMATIC FAST IDLE (PI
Tolerance mm	: <del></del> 0.25	+ (PLA) POSITION
Del. quantity		+
cm3/1000 strokes	: 24.5	1
Tolerance	. 67.7	control lever
cm3/1000 strokes	· - 2.0	+ position degree : 14.0
Check tolerance	_ ,	+ tolerance degree : +- 2.0
cm3/1000s.	: <del>+-</del> 3.0	+
Spreed		Rated speed rpm : 400
Tolerance		
cm3/1000 strokes	: 2.5	Rack travel in mm: 8.90
	. 2.3	Tolerance mm : +- 0.80
Check tolerance	7.0	1
cm3/1000s.	: 3.0	+ Del. quantity
		+ cm3/1000 strokes : 22.5
	<del></del>	+ Tolerance
STARTING FUEL DEL	LIVERY	+ cm3/1000 strokes : $+$ 3.5
		+ Check tolerance
Rated speed rpm	: 100	cm3/1000s. : +- 4.5
rack travel mm		Vacuum hPa : 400.0
		T Vacuum nra : 400.0
Tolerance mm	: +- 1.50	<b>†</b>
Del. quantity		†
cm3/1000 strokes	: 59.0	+
Tolerance		+
cm3/1000 strokes	: +- 4.0	TESTING PNEUMATIC SHUTOFF DEVICE
Check tolerance		T TOTAL PROPERTY ON OF OTHER
cm3/1000S.	: <del></del> 5.0	Pated and no. 705
	, <del>-</del> J.U	Rated speed rpm : 385
Spreed		+ Vacuum hPa : −450.0
Tolerance		†
cm3/1000 strokes	: 6.0	+
Check tolerance		<u> </u>
cm3/1000s.	: 6.0	1
		Find of test specification sheet
		ind or cost specification sheet
		T
		†
LOW IDLE		
		<del></del>
		— + + +
Rated speed rpm		— + + + +
Rated speed rpm rack travel mm		— + + + + +
LOW IDLE  Rated speed rpm rack travel mm Del. quantity cm3/1000 strokes	: 5.90	+ + + + + + + +

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.09.98 Test oil : ISO 4113

Combination No. : 0 400 075 921T4

Injection pump

Pump designation : PES5M55C32ORS189 EP type number : 0 410 055 953

Governor

Governer design. : RSF385/2000M81 Governer no. : 0 420 021 282

Cust. part No. : A 40007-5921

Customer—spec. information

Customer : DPICO Motor : OM 602 2,9ltr

Power KW : 70.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00

Tolerance mm : +- 1.00

Firing order : 1-2-4-5-3

Phasing : 0-72-144-216-288 : 0.80 : 1.00

Start of delivery blocking

°NW after s.o.d. : 15.50 Tolerance :  $\leftarrow 0.20$ 

Check

tolerance °NW : + 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 37.0

Tolerance cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 1.5

Spreed

Tolerance cm3/1000 strokes :	2.5	Tolerance mm	: +- 0.50
Check tolerance cm3/1000s. :	3.0	SET IDLE CONTROL	LEVER POSITION
Rated speed rpm : 3	+	Rated speed rpm	
Rack travel in mm : Tolerance mm : +-		CRT mm max.	: 1.45 
Del. quantity cm3/1000 strokes : Tolerance	8.5	LOW IDLE	
cm3/1000 strokes : +- Spreed Tolerance	0.5	control lever position degree tolerance degree	: 14.0
cm3/1000 strokes :	1.0	Setting point w/o	ut bumper spring
(B) SETTING OF INJECTION WITH GOVERNOR	I PUMP	Rated speed rpm rack travel mm	: 5.90
	‡	SET IDLE AUXILIAR	Y SPRING
IDLE STAGE	+	Rated speed rpm rack travel mm Tolerance mm	: 4.00
Rack travel in mm : Tolerance mm : +-		Load pick-up	
FULL LOAD DELIVERY AT FU	LL LOAD STOP	Rated speed rpm rack travel mm	: 250 : 12.00
Rated speed rpm : 10 Ref. pressure	00	Rated speed rpm	: 1000
ALDA / ADA hPa : Del. quantity	<del>}</del>	CRT mm max.	
cm3/1000 strokes : Tolerance cm3/1000 strokes : +-	+	rack travel mm Rated speed rpm	: 5.90 : 385
Check tolerance cm3/1000s. : +-	1.5		
Spreed Toleratice	<b>1</b>	TORQUE CONTROL	4000
cm3/1000 strokes : Check tolerance cm3/1000s. :	+	Rated speed rpm rack travel mm Tolerance mm	: 12.15
RATED SPEED	<del>-</del>	Rated speed rpm rack travel mm Tolerance mm	: 2000 : 12.15 : + 0.10
control lever position degree :	50.0		
Rated speed rpm : 22 rack travel mm : Tolerance mm : +- (	7.60	FUEL DELIVERY CHAR	RACTERISTICS
Rated speed rpm : 255 rack travel mm : 0	50 +	ALDA / ADA hPa Rated speed rpm	

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed	: 41.3 : + 1.0 : + 2.0	Check tole cm3/1000s Spreed Check tole cm3/1000s
Tolerance cm3/1000 strokes	: 2.5	<u> </u>
Check tolerance		+
cm3/1000s.	: 3.0	†
		control le
HIGH IDLE		- control le
Ref. pressure		+ position o
ALDA / ADA hPa Rated speed rpm	: – : 2250	†
rack travel mm	· 2250	SETTING PA
Tolerance mm	: <b>←</b> 0.25	(PLA) POSI
Del. quantity	2/ 4	+
cm3/1000 strokes Tolerance	: 24.1	† control le
cm3/1000 strokes	: +- 2.0	position
Check tolerance		tolerance
cm3/1000s.	: +- 3.0	† Rated and
Spreed Tolerance		+ Rated spee
cm3/1000 strokes	: 2.5	→   Rack trave
Check tolerance cm3/1000s.	: 3.0	+ Tolerance
CINS/ TUQUS.	; 3.0	+ Del. quant + cm3/1000 s
		Tolerance
STARTING FUEL DEL	IVERY	+ cm3/1000 s + Check tole
Rated speed rpm	: 100	+ cm3/1000s.
rack travel mm	: 21.60	+ Vacuum hPa
Tolerance mm	: <del>+-</del> 1.50	+
Del. quantity cm3/1000 strokes	: 59.0	I
Tolerance		<del> </del>
cm3/1000 strokes	: +- 4.0	+ TESTING PN
Check tolerance cm3/1000s.	: +- 5.0	+ Rated spee
Spreed		Vacuum hPa
Tolerance		+
cm3/1000 strokes Check tolerance	: 6.0	<u> </u>
cm3/1000s.	: 6.0	I
		End of tes
		_
LOW IDLE		Ī
Rated speed rpm rack travel mm	: 385 : 5.90	+

erance : +- 2.3 erance 1.5 .ever degree : > 47.00 .ever degree : < 44.50 NEUMATIC FAST IDLE (PLA) MOITE ever degree : 14.0 degree : + 2.0 ed rpm : 400 et in mm: 3.90 mm : + 0.80 tity strokes: 21.5 strokes :  $\leftarrow$  3.5 erance 3. : + 4.5 2a : 400.0 NEUMATIC SHUTOFF DEVICE ed rpm : 385 a : -450.0 st specification sheet

Del. quantity

cm3/1000 strokes : 9.8

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25.06.93 : ISO 4113

Combination No. : 0 401 840 764

Injection pump

Pump designation : PE12P110A920LS3173

EP type number : 0 411 810 708

Governor

Governer design. : RQV300...1150PA820

: -1

Governer no.

: 0 421 813 727

Cust. part No. :

Customer-spec. information

Customer : KHD Motor

: BF12L513 Power KW : 353.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1;4.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : <del>+-</del> 1.50

: 1-4-9-8-5-2 Firing order

: - 11- 10 · 3- 6 : - 7- 12

Phasing : 0-15-60-75-120-135

: -180-195-240-255

: -300-315

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.70 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 143.0

C14

	1
Tolerance cm3/1000 strokes : +- 1.0	RATED SPEED rack travel mm : 10.70 Rated speed rpm : 1195
Check tolerance cm3/1000s. : +- 4.0	Tolerance 1/min : +- 5  rack travel mm : 4.00
Spreed	Rated speed rpm : 1305  Tolerance 1/min : +- 15
Tolerance	Tocci di loc 17 mili
cm3/1000 strokes : 5.0	rack travel mm : 0.50 Tolerance mm : + 0.50
Check tolerance : 8.0	Rated speed rpm : 1400
Rated speed rpm : 300	LOW IDLE
Rack travel in mm : 6.70	+
Tolerance mm : +- 0.10	+ control lever
Del. quantity	+ position degree : 89.0
cm3/1000 strokes : 17.0	+ tolerance degree : + 4.0
Tolerance	+
cm3/1000 strokes : +- 3.0	+ control lever
Check tolerance	+ position degree : 24.0
cm3/1000s. : +- 5.5 Spreed	tolerance degree : + 4.0
Tolerance	Setting point w/out bumper spring
cm3/1000 strokes : 7.0	+
Check tolerance	Rated speed rpm : 100
cm3/1000s. : 10.0	+
	+ CRT mm min. : > 8.30
(B) SETTING OF INJECTION PUMP	Testing:
WITH GOVERNOR	700
	+ Rated speed rpm : 300
	rack travel mm : 6.70
GUIDE SLEEVE POSITION	↑ Tolerance mm : ← 0.10
	+ TORQUE CONTROL
control lever	+ Rated speed rpm : 1150
position degree : - 1	rack travel mm : 11.70
Rated speed rpm : 1190	+ Tolerance mm : + 0.05
Rack travel in mm : 16.50	
Tolerance mm : +- 1.30	ANEROID/ALTITUDE
Total ligation in 1130	+ COMPENSATOR TEST
	+
	+
CONTROL LEVER	SETTING
control lever	Rated speed rpm : 500
position degree : 58.0	+ Pressure hPa : 750
tolerance degree : +- 4.0	+ rack travel mm : 11.70
	+ Tolerance mm : + 0.10
control lever	+
position degree : 123.0	+ Rated speed rpm : 500
tolerance degree : +- 4.0	+ Pressure hPa : -
=	•

rack travel mm Tolerance mm	: 10.50 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 420 : 10.80 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 480 : 11.40 : + 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: < 100 : > 220
Check speed 1/min	: > 80
Check speed 1/min	: < 240
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 110.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 10.0 : +- 14.0
LOW IDLE	17.0
Rated speed rpm	: 300
varen sheen i bili	. 500

Rack travel in mm : 6.70

C16

Tolerance mm	: +-	0.10
Del. quantity cm3/1000 strokes Tolerance	:	17.0
cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s. Spreed	: +-	5.5
Tolerance cm3/1000 strokes	:	7.0
Check tolerance cm3/1000s.	:	10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Test oil : 03.12.86

Combination No. : 0 401 846 525

Injection pump

Pump designation : PE6P120A320RS438-1

EP type number : 0 411 826 133

Governor

Governer design. : RQV275...1200PA648

: -3

Governer no. : 0 421 813 535

Cust. part No. :

Customer-spec. information

Customer : RVI

: MIDS062030 Motor

Power KW

: 150.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

#### CRT ZERO POSITION

Rack travel in mm : 11.25 Tolerance mm : + 0.05

## BASIC SETTING

Del. quantity cm3/1000 strokes : 134.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. : +- 4.0	control lever position degree : - 1
Spreed	Rated speed rpm : 1210
Tolerance cm3/1000 strokes : 5.0	Rack travel in mm : 16.50 Tolerance mm : +- 1.30
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 275	Rated speed rpm : 1200 Aneroid pressure hPa : -
+	Del. quantity
Rack travel in mm: -4.90 + Tolerance mm: + 0.10 +	cm3/1000 strokes : 134.0 Tolerance
Del. quantity	cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 18.0 + Tolerance +	Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes : + 3.0 + Check tolerance	Spreed Tolerance
cm3/1000s. : + 6.0	cm3/1000 strokes : 5.0
Spreed + Tolerance +	Check tolerance cm3/1000S. : 9.0
cm3/1000 strokes : 8.0 + Check tolerance	
cm3/1000s. : 12.0	
#	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	<pre>control lever position degree : 122.0 tolerance degree : +- 4.0</pre>
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 1200	rack travel mm : -1.00 Rated speed rpm : 1260
guide sleeve + travel mm : 8.50 +	Tolerance 1/min : +- 5
Tolerance mm : + 0.10	rack travel mm : -7.20 Rated speed rpm : 1375
Rated speed rpm : 275 guide sleeve	Rated speed rpm : 1375 Tolerance 1/min : +- 15
travel mm : 1.30 + Tolerance mm : + 0.10	rack travel mm : -0.50
+	Tolerance mm : $\leftarrow$ 10.70 Rated speed rpm : 1500
Rated speed rpm : 400 + guide sleeve +	
travel mm : 3.65	
Tolerance mm : + 0.15	LOW IDLE
Rated speed rpm : 850 + guide sleeve +	
travel mm : 6.25 + Tolerance mm : + 0.15 +	control lever position degree : 69.0
Total Gride fight	
<b>!</b>	tolerance degree : +- 4.0

Rated speed rpm :

100

## Testing:

Rated speed rpm : rack travel mm : 275 rack travel mm : -4.90Tolerance mm : + 0.10

Rated speed rpm 200

CRT mm max. : < -1.90

Rated speed rpm : 318

#### Start interlock

Rated speed rpm 100 : > Rated speed rpm 195 : <

Check

speed 1/min : > 80

Check

speed 1/min : < 215

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 119.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

## STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 115.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

cm3/1000s. : +- 14.0

#### LOW IDLE

**C19** 

Rated speed rpm : 275

Rack travel in mm: -4.90

: +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s.

End of test specification sheet

12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 05.07.96 : ISO 4113

Combination No. : 0 401 846 571

Injection pump

Pump designation : PE6P110A320RS856 EP type number : 0 411 816 170

Governor

Governer design. : RQV250...1150PA1313

Governer no. : 0 421 814 183

Cust. part No. : 836354722

Customer-spec. information Customer : SISU : 612 DSI : 185.0 Motor Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

: **←** 0.75 tolerance °NW

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.05 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 140.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0	
Spreed	GUIDE SLEEVE POSITION
+	
Tolerance cm3/1000 strokes : 4.0	- control lever - position degree : — 1 - Rated speed rpm : 1312
Check tolerance cm3/1000s. : 7.5	Rack travel in mm : 11.05 Tolerance mm : + 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 6.20	Rated speed rpm : 700
Tolerance mm : + 0.10	Aneroid pressure
Del. quantity	hPa : 700
cm3/1000 strokes : 14.0	Del. quantity
Tolerance	cm3/1000 strokes : 140.0
cm3/1000 strokes : + 2.0 +	Tolerance
Check tolerance + 4.5 + 4.5	cm3/1000 strokes : +- 1.0
Spreed + 4.5	Check tolerance cm3/1000S. : +- 4.0
Tolerance	Spreed
cm3/1000 strokes : 3.0	Tolerance
Check tolerance	cm3/1000 strokes : 4.0
cm3/1000s. : 6.0	Check tolerance
†	cm3/1000s. : 7.5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
+	position degree : 52.0
Rated speed rpm : 1207 + guide sleeve +	tolerance degree : +- 4.0
travel mm : 8.36	control lever
To/enance mm : + 0.15	position degree : 115.0 tolerance degree : +- 4.0
Raved speed rpm : 325	DATES COFFS
guide sleeve + travel mm : 2.03 +	RATED SPEED rack travel mm : 11.00
Tolerance mm : + 0.20	Rated speed rpm : 1195
-	Tolerance 1/min : + 5
Rated speed rpm : 800 +	
guide sleeve	rack travel mm : 4.00
travel mm : 5.24 + 0.25	Rated speed rpm : 1295
Tolerance mm : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm : 460 guide sleeve	rack travel mm : 0.50 Tolerance mm : +- 0.50
travel mm : 3.08	Rated speed rpm : 1450
Tolerance mm : + 0.25	that op source in the source i
Rated speed rpm : 1490	
travel mm : 11.50	LOW IDLE
Tolerance mm : + 0.50	

control lever 87.0 position degree : tolerance degree : +- 4.0 control lever position degree : 20.0 tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 100 CRT mm min. : > 7.70Testing: : 325 Rated speed rpm rack travel mm : 6.20 : +- 0.10 Tolerance mm Rated speed rpm 413 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.05 Tolerance mm : **←** 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 1000 rack travel mm 12.05 : +- 0.05 Tolerance mm Rated speed rpm 500 Pressure hPa 10.40 rack travel mm Tolerance mm : + - 0.10**MEASUREMENT** Rated speed rpm 500 Pressure hPa 270 rack travel mm 10.80 : **←** 0.10 Tolerance mm Pressure hPa 415 : 11.65 rack travel mm : +- 0.05 Tolerance mm

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 104.0
Tolerance
cm3/1000 strokes : + 1.5
Check tolerance
cm3/1000s. : + 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 14.0

#### LOW IDLE

Rated speed rpm : 325 Rack travel in mm : 6.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance cm3/1000s. : +-4.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 6.0 :

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 13.02.98 : ISO 4113

Combination No. : 0 401 846 882

Injection pump

Pump designation : PE6P120A320RS3206-1

EP type number : 0 411 826 775

Governor

Governer design. : RQ750PA783-1

Governer no. : 0 421 801 432

Cust. part No. : 863232 PO5 V. 06/96

Customer-spec. information

Customer : VOLVO-PENTA

Motor : TWD 1211 G Power KW : 288.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.

2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Overflow quantity

min. l/h : 215 Tolerance l/h : +- 20.0

Test nozzle holde assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.50
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance  $^{\circ}NW$  : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

		+ guide sleeve
		† travel mm : 10.00
Rack travel in mm		+ Tolerance mm : +- 0.25
Tolerance mm	: +- 0.05	†
Nal minakasi.		Rated speed rpm : 870
Del. quantity cm3/1000 strokes	. 7/5 0	guide sleeve
cm3/ (UUU strokes	: 345.0	travel mm : 11.50
Tolerance		+ Tolerance mm : + 0.50
cm3/1000 strokes	: <del></del> 1.0	I
CHD/ 1000 Strokes	. 1 1.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	The state of the s	TOLL LOAD DELIVERY AT TOLL LOAD STOP
cm3/1000s.	: +- 4.0	+ Rated speed rpm : 700
		Aneroid pressure
Spreed		+ hPa : -
•		+ Del. quantity
Tolerance		+ cm3/1000 strokes : 345.0
cm3/1000 strokes	: 5.0	† Tolerance
		+ cm3/1000 strokes : +- 1.0
Check tolerance		+ Check tolerance
cm3/1000s.	: 9.0	+ cm3/1000s. : $+$ 4.0
		+ Spreed
		+ Tolerance
Dated speed non	: 300	+ cm3/1000 strokes : 5.0
Rated speed rpm Del. quantity	: 300	+ Check tolerance + cm3/1000s. : 9.0
cm3/1000 strokes	: 20.0	+ cm3/1000s. : 9.0
Tolerance	. 20.0	I
cm3/1000 strokes	: <del>-</del> 3.0	
Check tolerance		+ CONTROL LEVER
cm3/1000s.	: +- 6.0	-
Spreed		- control lever
Tolerance		position degree : 88.0
cm3/1000 strokes	: 5.0	tolerance degree : +- 4.0
Check tolerance		+
cm3/1000s.	: 8.0	+ RATED SPEED
		+ rack travel mm : 12.80
(0) 0	1	+ Rated speed rpm : 751
(B) SETTING OF IN.	JECTION PUMP	+ Tolerance 1/min : +- 3
WITH GOVERNOR		rack travel mm : 4.00
		+ Rated speed rpm : 791
GUIDE SLEEVE TRAVE	=1	Tolerance 1/min : + 8
OOTOL SELEVE TIME		Total and a minimum .
Rated speed rpm	: 757	+ rack travel mm : 0.50
guide sleeve		+ Tolerance mm : + 0.50
travel mm	: 4.06	+ Rated speed rpm : 850
Tolerance mm	: <del>+-</del> 0.25	+
		+ ASSEMBLY GOVERNOR SETTING
Rated speed rpm	: 510	+
guide sleeve	0.77	+ Rated speed rpm : 748
travel mm	: -8.33	rack travel mm : 12.80
Tolerance mm	: <b>←</b> 0.25	Total aread area
Dated appeal and	. 940	+ Rated speed rpm : 789
Rated speed rpm guide sleeve	: 860	+ Tolerance 1/min : + 5 + rack travel mm : 4.00
travel mm	: 16.96	I rack cravec min . 4.00
Tolerance mm	: +- 0.25	rack travel mm : 0.50
		+ Tolerance mm : + 0.50
Rated speed rpm	: 814	+ Rated speed rpm : 850
• • • •		The second secon

Rated speed rpm rack travel mm	: :	749 12.80
Rated speed rpm Tolerance 1/min rack travel mm	: : +-	790 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +- :	0.50 0.50 850
Rated speed rpm rack travel mm	:	750 12.80
Rated speed rpm Tolerance 1/min rack travel mm	: +-	791 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: +	0.50 0.50 850
Rated speed rpm rack travel mm	:	751 12.80
Rated speed rpm Tolerance 1/min rack travel mm	: : +-	792 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +- :	0.50 0.50 850
Rated speed rpm rack travel mm	•	752 12.80
Rated speed rpm Tolerance 1/min rack travel mm	: +-	793 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +- :	0.50 0.50 850
Rated speed rpm rack travel mm	:	753 12.80
Rated speed rpm Tolerance 1/min rack travel mm	: : +- :	794 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +- :	0.50 0.50 850

TORQUE CONTROL		
Rated speed rpm	:	700
rack travel mm	:	13.80
Tolerance mm	; +-	0.05

# LOW IDLE

•	300	
:	20.0	
: +-	3.0	
: +-	6.0	
:	5.0	
:	8.0	
	•	: 20.0 : + 3.0 : + 6.0 : 5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 23.01.96 Edition Test oil : ISO 4113

Combination No. : 0 401 846 882D

Injection pump

Pump designation : PE6P120A320RS3206-1 EP type number : 0 411 826 775

Governor

Governer design. : RQ750PA783-1 Governer no. : 0 421 801 432

Cust. part No. : 865037 PO3 V. 02/95

Customer-spec. information Customer : PENTA : TAMD 122 Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.50 Tolerance mm : + 0.05 Check

Rack travel in mm: 10.50 Tolerance mm : + 1.50

tolerance mm :  $\leftarrow$  0.10

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barret no. : 1

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 345.0

Tolerance

cm3/1000 strokes : + 1.0

		+
Check tolerance cm3/1000s.	: +- 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed		Rated speed rpm : 700
Tolerance cm3/1000 strokes	: 5.0	+ Aneroid pressure + hPa : - - Del quantity
Check tolerance cm3/1000s.	: 9.0	- cm3/1000 strokes : 345.0 - Tolerance - cm3/1000 strokes : +- 1.0
		+ Check tolerance + cm3/1000S. : +- 4.0
Rated speed rpm Del. quantity	: 300	+ Spreed + Tolerance + cm3/1000 strokes : 5.0
cm3/1000 strokes Tolerance	: 20.0	Check tolerance + cm3/1000s. : 9.0
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0	T (1137 10003 7.0
cm3/1000s. Spreed	: <b>←</b> 6.0	CONTROL LEVER
Tolerance cm3/1000 strokes Check tolerance	: 5.0	control lever position degree : 94.0
cm3/1000s.	: 8.0	tolerance degree : +- 4.0
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP	RATED SPEED rack travel mm : 12.80 Rated speed rpm : 825 Tolerance 1/min : + 3
GUIDE SLEEVE TRAV	EL	rack travel mm : 4.00
Rated speed rpm guide sleeve	: 759	Rated speed rpm : 885 Tolerance 1/min : +- 15
travel mm Tolerance mm	: 6.78 : ← 0.15	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 950
Rated speed rpm guide sleeve		ASSEMBLY GOVERNOR SETTING
travel mm Tolerance mm	: -6.60 : +- 0.25	+ Rated speed rpm : 822 + rack travel mm : 12.80
Rated speed rpm guide sleeve		+ Rated speed rpm : 880
travel mm Tolerance mm	: 16.84 : +- 0.25	Tolerance 1/min : + 5 rack travel mm : 4.00
Rated speed rpm guide sleeve	: 790	rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm Tolerance mm	: 10.00 : +- 0.25	Rated speed rpm : 950
Rated speed rpm guide sleeve	: 850	+ Rated speed rpm : 823 + rack travel mm : 12.80
travel mm Tolerance mm	: 11.50 : +- 0.50	+ Rated speed rpm : 881
		+ Tolerance 1/min : +- 5 + rack travel mm : 4.00

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 950
Rated speed rpm	: 824
rack travel mm	: 12.80
Rated speed rpm	: 882
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 950
Rated speed rpm	: 825
rack travel mm	: 12.80
Rated speed rpm	: 883
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: ← 0.50
Rated speed rpm	: 950
Rated speed rpm	: 826
rack travel mm	: 12.80
Rated speed rpm	: 884
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: ← 0.50
Rated speed rpm	: 950
Rated speed rpm	: 827
rack travel mm	: 12.80
Rated speed rpm	: 885
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 950

TORQUE CONTROL			
Rated speed rpm	:		700
rack travel mm	:		13.80
Tolerance mm	: -	+-	0.05

LOW IDLE	
Rated speed rpm Del. quantity	: 300
cm3/1000 strokes	: 20.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.09.95 Test oil : ISO 4113

Combination No. : 0 401 846 968

Injection pump

Pump designation : PE6P110A320RS3197

EP type number : 0 411 816 752

Governor

Governer design. : RQV300...1100PA589

: -4

Governer no. : 0 421 814 022

Cust. part No. : 11031149

: -P02 v100593

Customer-spec. information

Customer : VME

Motor

: TD102 KF : 200.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 11.95

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 170.0

D01

Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 3.71 Tolerance mm : +- 0.25
Check tolerance cm3/1000s. : +- 3.0	Rated speed rpm : 520 guide sleeve
Spreed	travel mm : 4.67 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 1370 guide sleeve
Check tolerance cm3/1000s. : 7.5	travel mm : 11.50 Tolerance mm : + 0.50
Rated speed rpm : 300	GUIDE SLEEVE POSITION
Rack travel in mm: 4.40 Tolerance mm: +- 0.10 Del. quantity cm3/1000 strokes: 27.0 Tolerance cm3/1000 strokes: +- 2.0 Check tolerance cm3/1000s: +- 5.0	control lever position degree : - 1 Rated speed rpm : 1180  Rack travel in mm : 16.50 Tolerance mm : + 1.30
Spreed +	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 4.5 + Check tolerance cm3/1000s. : 7.5 +	Rated speed rpm : 700 Aneroid pressure hPa : 1000
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Del. quantity cm3/1000 strokes : 170.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000S. : +- 3.0 Spreed
Rated speed rpm : 1176 guide sleeve travel mm : 8.34 Tolerance mm : + 0.25  Rated speed rpm : 300	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5
guide sleeve travel mm : 1.76 Tolerance mm : + 0.25	CONTROL LEVER
Rated speed rpm : 1087 guide sleeve	position degree : 63.0 tolerance degree : + 4.0
travel mm : 6.96 Tolerance mm : + 0.25	control lever position degree : 120.0 tolerance degree : +- 4.0
Rated speed rpm : 387 guide sleeve travel mm : 2.96 Tolerance mm : + 0.25	RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1165 Tolerance 1/min : +- 5
Rated speed rpm : 437	

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm	: 1240 : ← 15 : 0.50 : ← 0.50
LOW IDLE	
control lever position degree tolerance degree	: 64.0 : +- 4.0
control lever position degree tolerance degree	: 9.0 : + 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 5.90
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.40 : +- 0.10
Rated speed rpm	: 315
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.95 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 11.95 : ← 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.95 : + 0.15

Rated speed rpm : 500 Pressure hPa : 440 rack travel mm : 1.60 Tolerance mm : + 0.10 Pressure hPa : 200 rack travel mm : 0.25 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 128.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm :  $\leftarrow$  0.50 Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes :  $\leftarrow$  15.0 LOW IDLE Rated speed rpm : 300 Rack travel in mm: 4.40 Tolerance mm :  $\leftarrow$  0.10 Del. quantity cm3/1000 strokes : 27.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : <del>+-</del> 5.0 Spreed Tolerance cm3/1000 strokes : 4.5 cm3/1000 s.c... Check tolerance

**MEASUREMENT** 

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.07.98 Edition Test oil : ISO 4113

Combination No. : 0 401 846 996

Injection pump

Pump designation : PE6P120A320RS3405 EP type number : 0 411 826 822

Governor

Governer design. : RQ750PA783-1 Governer no. : 0 421 801 432

Cust. part No. : 3828439 PO1 v.05.98

Customer-spec. information Customer : PENTA

Motor : TWD 1211 G Power KW : 286.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm): 4.2

Test oil inlet

: 40 temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Overflow quantity

min. l/h : 215 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.50
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

## Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

		_ + guide sleeve	
<b>6</b> . <b>1 A 1</b> . 2	43.50	+ travel mm	: 10.00
Rack travel in mn	m: 12.50 :+- 0.05	† Tolerance mm	: ← 0.25
Tolerance mm	: +- 0.05	Pated speed spm	: 870
Del. quantity		_	. 870
cm3/1000 strokes	: 306.0	+ travel mm	: 11.50
they reserve servers	. 300.0	+ Tolerance mm	: <del>+-</del> 0.50
Tolerance		_ +	
cm3/1000 strokes	: +- 1.0	-	
		_ + FULL LOAD DELIVER	RY AT FULL LOAD STOP
Check tolerance		†	700
cm3/1000s.	: <del></del> 4.0	+ Rated speed rpm	: 700
Spreed		_ + Aneroid pressure + hPa	
opi ecu		Del. quantity	•
Tolerance		+ cm3/1000 strokes	: 306.0
cm3/1000 strokes	: 5.0	+ Tolerance	
		_ + cm3/1000 strokes	: <del></del> 1.0
Check tolerance	0.0	+ Check tolerance	
cm3/1000s.	: 9.0	+ cm3/1000s.	: +- 4.0
	···	_ + Spreed	
		+ Tolerance + cm3/1000 strokes	: 5.0
Rated speed rpm	: 300	Check tolerance	. 5.0
Del. quantity	. 555	+ cm3/1000s.	9.0
cm3/1000 strokes	: 20.0	+	
Tolerance		+	
cm3/1000 strokes	: <b>←</b> 3.0	+	
Check tolerance		+ CONTROL LEVER	
cm3/1000s. Spreed	: +- 6.0	t control lever	
Tolerance		+ position degree	: 86.0
cm3/1000 strokes	: 5.0	tolerance degree	
Check tolerance		+	
cm3/1000s.	: 8.0	+	
		+ ASSEMBLY GOVERNOR	SETTING
(D) 0000000 05 711	LIEGTTON DUMP	+ 5.	7/0
(B) SETTING OF IN WITH GOVERNOR	DECITOR POMP	+ Rated speed rpm + rack travel mm	: 748 : 11.50
WITH GOVERNOR		Tack travet min	: 11.50
		Rated speed rpm	: 789
GUIDE SLEEVE TRAV	EL	+ Tolerance 1/min	: +- 5
		† rack travel mm	: 4.00
Rated speed rpm	: 758	+	0.50
guide sleeve	. 7.95	+ rack travel mm	: 0.50
travel mm Tolerance mm	: 3.85 : +- 0.15	+ Tolerance mm + Rated speed rpm	: +- 0.50 : 850
rocerance min	. +- 0.13	T Kated speed rpiii	. 630
Rated speed rpm	: 510	1	
guide sleeve		+ Rated speed rpm	: 749
travel mm	: -8.48	† rack travel mm	: 11.50
Tolerance mm	: <del>+-</del> 0.25	<b>†</b>	700
Datad annual new	. 940	+ Rated speed rpm	: 790
Rated speed rpm guide sleeve	: 860	Tolerance 1/min rack travel mm	: +- 5 : 4.00
travel mm	: 16.67	T I dek ci avec iimi	. 4.00
Tolerance mm	: + 0.25	T rack travel mm	: 0.50
	<del></del>	+ Tolerance mm	: + 0.50
Rated speed rpm	: 816	+ Rated speed rpm	: 850

Rated speed rpm rack travel mm	:	750 11.50
Rated speed rpm Tolerance 1/min rack travel mm	: +-	791 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +-	0.50 0.50 850
Rated speed rpm rack travel mm	:	751 11.50
Rated speed rpm Tolerance 1/min rack travel mm	: : +-	792 5 4.00
rack travel mm Tolerance mm Rated speed rpm	+-	0.50 0.50 850
Rated speed rpm rack travel mm	:	752 11.50
Rated speed rpm Tolerance 1/min rack travel mm	: : +-	793 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +- :	0.50 0.50 850
Rated speed rpm rack travel mm	•	753 11.50
Rated speed rpm Tolerance 1/min rack travel mm	: +-	794 5 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +-	0.50 0.50 850

TORQUE CONTROL		
Rated speed rpm	:	700
rack travel mm	:	12.50
Tolerance mm	: +	- 0.05

# LOW IDLE

Rated speed rpm Del. quantity	:	300	
cm3/1000 strokes	:	20.0	
cm3/1000 strokes Check tolerance	: +	3.0	
cm3/1000s.	: +-	6.0	
Tolerance cm3/1000 strokes		5.0	
Check tolerance cm3/1000s.	:	8.0	
	•	2.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.01.98 Test oil : ISO 4113

Combination No. : 0 401 876 780

Injection pump

Pump designation : PE6P120A320RS3206-1 EP type number : 0 411 826 775

Governor

Governer design. : RSV250...900P4A550 Governer no. : 0 421 833 354

Cust. part No. : 864410-P05 v. 06/96

Customer—spec. information Customer : PENTA Motor : TID121LP Power KW : 295.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.25Tolerance mm : + 0.05

	+ Aneroid pressure
Del. quantity cm3/1000 strokes : 299.0	+ hPa : - + Del. quantity
Tolerance	+ cm3/1000 strokes : 299.0 + Tolerance
cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
Check tolerance cm3/1000s. : +- 4.0	- cm3/1000S. : +- 4.0 - Spreed - Tolerance
Spreed	cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
	control lever
700	position degree : 57.0
Rated speed rpm : 300	+ tolerance degree : +- 4.0
Rack travel in mm : 4.80	control lever
Tolerance mm : + 0.10	position degree : 107.0
Del. quantity - cm3/1000 strokes : 23.0 -	tolerance degree : +- 4.0
Tolerance	RATED SPEED
cm3/1000 strokes : + 3.0	rack travel mm : 11.25
Check tolerance	Rated speed rpm : 950
cm3/1000S. : +- 6.0 Spreed	+ Tolerance 1/min : +- 5
Tolerance -	rack travel mm : 4.00
cm3/1000 strokes : 5.0 -	Rated speed rpm : 1000
Check tolerance - cm3/1000s. : 8.0 -	Tolerance 1/min : +- 15
CM3/10005. : 8.0 -	rack travel mm : 0.85
-	Tolerance mm : + 0.55
(B) SETTING OF INJECTION PUMP - WITH GOVERNOR -	Rated speed rpm : 1150
GUIDE SLEEVE POSITION	LOW IDLE
3322 3222 7 332 231	-
to	<del> </del>
control lever - position degree : - 3	control lever position degree : 74.0
Rated speed rpm : 800	tolerance degree : +- 4.0
<del>-</del>	+
Rack travel in mm: 0.50	control lever
Tolerance mm : +- 0.20	position degree : 24.0 tolerance degree : +- 4.0
governor spring	- total ance degree 4.0
pre-tension -	Setting point w/out bumper spring
click setting $x$ : 5.00	Dated award awar 700
	- Rated speed rpm : 300 - rack travel mm : 4.30
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : 4.30
1 2 2 3 3 2 2 2 3 2 3 2 3 3 3 3 3 3 3 3	

Testing:

009

Rated speed rpm : 700

Rated speed rpm : 300 rack travel mm : 4.80 Tolerance mm : + 0.10

rack travel mm : 2.00 Rated speed rpm : 370 2.00 Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 12.25 Tolerance mm : + 0.05

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50

Del. quantity

cm3/1000 strokes : 280.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000S. : +- 19.0

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : +- 3.0Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

: 8.0 cm3/1000S.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.11.93 : ISO 4113

Combination No. : 0 401 876 799

Injection pump

Pump designation : PE6P120A320RS3206-4 EP type number : 0 411 826 810

Governor

Governer design. : RSV250...900P4A550

Governer no. : 0 421 833 354

Cust. part No. : 11031815-P02

Customer-spec. information Customer : VME

Motor

: TD 121 G

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Del. quantity cm3/1000 strokes : 246.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rack travel in mm: 5.10 Tolerance mm : + 0.10 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : + 0.20 governor spring pre-tension click setting x : 5.00CONTROL LEVER control lever position degree : 63.0 tolerance degree : + 4.0 control lever position degree : 113.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 10.35 Rated speed rpm : 950 Tolerance 1/min : +- 5 rack travel mm : 4.0 Rated speed rpm : 1000 4.00 Tolerance 1/min : + 15

LOW IDLE control lever position degree : 79.0 tolerance degree : +- 4.0 control lever position degree : 29.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 300 rack travel mm : 4.60 Tolerance mm : + 0.10 Testing: Rated speed rpm : 300 rack travel mm : 5.10
Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 370 Tolerance 1/min : +-STARTING FUEL DELIVERY Del. quantity cm3/1000 strokes : 280.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : <del>+-</del> 19.0 LOW IDLE Rack travel in mm : 5.10 Tolerance mm : + 0.10

End of test specification sheet

rack travel mm : 0.85Tolerance mm :  $\leftarrow 0.55$ Rated speed rpm : 1150

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 12.02.98 : ISO 4113

Combination No. : 0 401 876 802

Injection pump

Pump designation : PE6P120A320RS3206-1 EP type number : 0 411 826 775

Governor

Governer design. : RSV250...900P4A550

: -1

Governer no.

: 0 421 833 427

Cust. part No. : 866383-P06 V. 06.96

Customer-spec. information Customer : PENTA

Motor

: TWD1210P

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 2 417 413 077

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Overflow quantity

min. L/h

: 160

Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm

3.50

Tolerance mm

: +- 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 11.30

Tolerance mm : + 0.50

Firing order

: 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance

: +- 0.50

Check

tolerance °NW

: **←** 0.75

Barrel no.

: 1

	†
BASIC SETTING	<pre>governor spring pre-tension</pre>
BASIC SETTING	click setting x : 4.00
Rated speed rpm : 700	+
Dools Amount in my s 11 75	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 11.35 Tolerance mm : + 0.05	Rated speed rpm : 700
TOTAL MAIN	+ Aneroid pressure
Del. quantity	+ hPa : -
cm3/1000 strokes : 252.0	+ Del. quantity
	- cm3/1000 strokes : 252.0
Tolerance	Tolerance
cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : + 1.0 + Check tolerance
Check tolerance	cm3/1000s. : +- 4.0
cm3/1000s. : +- 4.0	Spreed
	Tolerance
Spreed	+ cm3/1000 strokes : 6.0
	+ Check tolerance
Tolerance	+ cm3/1000s. : 9.0
cm3/1000 strokes : 6.0	†
Check tolerance	
cm3/1000s. : 9.0	CONTROL LEVER
	+
	+ control lever
700	position degree : 61.0
Rated speed rpm : 300	tolerance degree : + 4.0
Rack travel in mm : 5.10	+ control lever
Tolerance mm : +- 0.10	position degree : 111.0
Del. quantity	tolerance degree : +- 4.0
cm3/1000 strokes : 23.0	+
Tolerance	+ RATED SPEED
cm3/1000 strokes : + 3.0	rack travel mm : 10.35
Check tolerance cm3/1000s. : + 6.0	+ Rated speed rpm : 930
Spreed	† Tolerance 1/min : +- 5
Tolerance	+ rack travel mm : 4.00
cm3/1000 strokes : 5.0	+ Rated speed rpm : 970
Check tolerance	+ Tolerance 1/min : +- 15
cm3/1000s. : 8.0	†
	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1100
(B) SETTING OF INJECTION PUMP	Pated speed rom : 1100
WITH GOVERNOR	T Nated speed (pii) . 1100
	1
	+
GUIDE SLEEVE POSITION	+ LOW IDLE
	†
control lever	+ control lever
position degree : - 3	position degree : 80.0
Rated speed rpm : 800	+ tolerance degree : + 4.0
	+
Rack travel in mm : 0.50	+ control lever
Tolerance mm : ← 0.20	+ position degree : 30.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 300 rack travel mm : 4.60 Tolerance mm : + 0.10

Testing:

Rated speed rpm : 300 rack travel mm : 5.10 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 11.35 Tolerance mm : + 0.05

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 292.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 5.10 Tolerance mm : ← 0.10

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.06.93 Test oil : ISO 4113

Combination No. : 0 402 046 784

Injection pump

Pump designation : PES6P120A320RS3139 EP type number : 0 412 026 718

Governor

Governer design. : RQV275...1000PA728

: -2

Governer no. : 0 421 813 599

Cust. part No. : CCEP 5047C

Customer-spec. information

Customer : RVI

: MIDR 062045 E Motor

Power KW : 236.0

#### TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar :  $\leftarrow$  1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.70

Start of delivery mark

°NW after s.o.d. : 9.00

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 10.50 Tolerance mm : +- 0.50

#### CRT ZERO POSITION

Rack travel in mm : 11.25

D16

Tolerance mm	: +- 0.05	guide sleeve travel mm : 5.80
BASIC SETTING		Tolerance mm : + 0.20
Rated speed rpm	: 1000	Rated speed rpm : 450 guide sleeve travel mm : 3.50
Del. quantity cm3/1000 strokes	: 161.0	Tolerance mm : + 0.20
Tolerance cm3/1000 strokes	: + 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	: + 4.0	<pre>control lever position degree : - 1 Rated speed rpm : 1250</pre>
Spreed		
Tolerance cm3/1000 strokes	: 5.0	Rack travel in mm : 11.20 Tolerance mm : + 1.30
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
CHS7 10005.		Rated speed rpm : 1000 Aneroid pressure hPa : 1000
Rated speed rpm	: 275	Del. quantity cm3/1000 strokes : 161.0
Rack travel in mm Tolerance mm Del. quantity	: -5.70 : + 0.10	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes	: 34.5	cm $3/1000$ s. : +- 4.0
Tolerance cm3/1000 strokes	: + 2.0	Spreed Tolerance
Check tolerance cm3/1000s.	: + 5.0	cm3/1000 strokes : 5.0 Check tolerance
Spreed Tolerance	1	cm3/1000s. : 9.0
cm3/1000 strokes Check tolerance	: 8.0	
	: 12.0	CONTROL LEVER
	‡	control lever
(B) SETTING OF INJUNIOR WITH GOVERNOR	ECTION PUMP	position degree : 119.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVE	<u> </u>	RATED SPEED rack travel mm : -1.00
	+	Rated speed rpm : 1070
Rated speed rpm guide sleeve	: 1000	Tolerance 1/min : +- 5
	: 7.10 : + 0.10	rack travel mm : -7.20 Rated speed rpm : 1195 Tolerance 1/min : +- 15
Rated speed rpm	: 250	
	: 1.00 : + 0.10	rack travel mm : -10.75 Tolerance mm : +- 0.55 Rated speed rpm : 1300
Rated speed rpm	: 800	

#### LOW IDLE

control lever

position degree : 68.0 tolerance degree : +- 4.0

## Testing:

Rated speed rpm : 275
rack travel mm : -5.70
Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm max. : < -4.00

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600

Rated speed rpm : 500 rack travel mm : -2.80 Tolerance mm : +- 0.25

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1000 Pressure hPa : 1000

Rated speed rpm : 1000
Pressure hPa : rack travel mm : -2.80
Tolerance mm : + 0.20

#### **MEASUREMENT**

Rated speed rpm : 1000

Pressure hPa : 320 rack travel mm : -0.70 Tolerance mm : +-0.10

Pressure hPa : 160 rack travel mm : -2.05 Tolerance mm : + 0.05

## Start interlock

Rated speed rpm : > 100 Rated speed rpm : < 195

Check

speed 1/min : > 80

Check

speed 1/min : < 215

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 185.5

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000S. :  $\leftarrow$  6.0

Aneroid pressure

hPa : Rated speed rpm : 500
rack travel mm : -2.80
Tolerance mm : +- 0.25

Del. quantity

cm3/1000 strokes : 110.5

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000S. : +- 6.0

Aneroid pressure

hPa : Rated speed rpm : 1000
Del. quantity

cm3/1000 strokes : 113.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000S. : +- 4.0

## STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm	:	275	
Rack travel in mm	:	-5.70	
Tolerance mm	: +-	0.10	
Del. quantity cm3/1000 strokes	:	34.5	
Tolerance			
cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000s.	: +	5.0	
Spreed			
Tolerance cm3/1000 strokes	•	8.0	
Check tolerance	•	0.0	
cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.09.98 : 21.09.98 : ISO 4113

Combination No. : 0 402 610 806

Injection pump

Pump designation : PE12P120A500LS7933

EP type number : 0 412 620 853

Governor

Governer design. : Governer no.

Cust. part No. : 51.11103-7456

Customer-spec. information

Motor

Customer : MAN
Motor : D2842 LE \*\*\* Power KW : 653.0

#### TEST BENCH REQUIREMENTS

Inlet line : 1.1;2.1

Test oil inlet

temp. °C Tolerance °C 40

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : ← 0.1

Overflow quantity

min. l/h : 165 Tolerance l/h : + 5.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 207.0

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

x length mm : 590

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 12-1A-5-9A-8-3A-4

: -11A-10-2A-6

Phasing

: 0-45-60-105-120-165

: -180-225-240-285

: -300-345

Tolerance Check

: +- 0.50

tolerance °NW

: +- 0.75

# Start of delivery mark

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 12

## BASIC SETTING

Rated speed rpm :

700

Rack travel in mm : 12.60

D20

Tolerance mm :	+- 0.05
Del. quantity cm3/1000 strokes :	340.0
Tolerance cm3/1000 strokes :	+- 1.0
Check tolerance cm3/1000s. :	+- 4.0
Spreed	
Tolerance cm3/1000 strokes :	8.0
Check tolerance cm3/1000s. :	12.0
Rated speed rpm :	300
Rack travel in mm : Tolerance mm :	7.00 ← 0.10
Del. quantity cm3/1000 strokes :	115.0
Tolerance cm3/1000 strokes :	<b>⊢</b> 3.0
Check tolerance cm3/1000s. : - Spreed	<b>⊢</b> 6.0
Tolerance cm3/1000 strokes :	8.0
Check tolerance cm3/1000s. :	12.0
(B) SETTING OF INJECT WITH GOVERNOR	TION PUMP
FULL LOAD DELIVERY AT	FULL LOAD STOP
Rated speed rpm : Aneroid pressure	700
hPa : Del. quantity	-
cm3/1000 strokes : Tolerance	340.0
cm3/1000 strokes : + Check tolerance	- 1.0
cm3/1000S. : + Spreed Tolerance	- 4.0
cm3/1000 strokes : Check tolerance	8.0
cm3/1000s. :	12.0

LOW IDLE				
Testing:				
Rated speed rpm rack travel mm Tolerance mm	: : : +-	300 7.00 - 0.10	) )	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: +-	700 12.60 - 0.05		
LOW IDLE		<del>-</del>	<del></del>	
LOW IDLE Rated speed rpm	:	300		
Rated speed rpm Rack travel in mm Tolerance mm		300 7.00 - 0.10		
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: : +-	7.00		
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : +-	7.00 - 0.10		
Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.	: +-	7.00 - 0.10 115.0		
Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.  Spreed  Tolerance	: +-	7.00 - 0.10 115.0 - 3.0 - 6.0		
Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.  Spreed	: +- : +-	7.00 - 0.10 115.0 - 3.0		

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : ISO 4113

: 16.09.96

Combination No. : 0 402 646 655

Injection pump

Pump designation : PE6P120A320RS7361

EP type number : 0 412 626 939

Governor

Governer design. : RQV275...1150PA1192K

Governer no. : 0 421 815 452

Cust. part No. : 1304201/0

Customer-spec. information

Customer : DAF

Motor : RS/GS 245 M Power KW : 245.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 140
Tolerance l/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

**D22** 

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ← 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : <del>+-</del> 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 14.65

Tolerance mm : +- 0.05

		l mulida al anca
Dal manditu.		+ guide sleeve
Del. quantity cm3/1000 strokes	: 239.0	+ travel mm : 2.13 + Tolerance mm : + 0.25
Tolerance cm3/1000 strokes	1 0	Rated speed rpm : 350 guide sleeve
CIIDA 1000 STLOKES	. — 1.0	travel mm : 2.97
Check tolerance cm3/1000s.	: +- 4.0	Tolerance mm : + 0.25
		Rated speed rpm : 460
Spreed		† guide sleeve † travel mm : 3.90
Tolerance		+ Tolerance mm : + 0.25
cm3/1000 strokes	: 5.0	+
Charle talenana		+ Rated speed rpm : 1480
Check tolerance cm3/1000s.	: 9.0	† guide sleeve † travel mm : 13.50
CIII 7 10003.	. 7.0	+ Tolerance mm : +- 0.50
		+
Rated speed rpm	: 275	GUIDE SLEEVE POSITION
	F 70	+
Rack travel in mm		†
	: +- 0.10	+ control lever
Del. quantity	47.0	+ position degree : - 1
cm3/1000 strokes	: 13.0	Rated speed rpm : 1275
Tolerance cm3/1000 strokes :	7.0	T Book thought in many 17 50
Check tolerance	: 3.0	+ Rack travel in mm : 13.50 + Tolerance mm : + 1.30
	· <del>-</del> 6.0	Toterance mm : + 1.30
Spreed	. +- 0.0	I
Tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes :	: 8.0	T FOLL LOAD DELIVERY AT FOLL LOAD STOP
Check tolerance	0.0	Rated speed rpm : 1130
	: 12.0	Aneroid pressure
	12.0	+ hPa : 1500
		+ Del. quantity
(B) SETTING OF INJE	ECTION PUMP	+ cm3/1000 strokes : 239.0
WITH GOVERNOR		+ Tolerance
		+ cm3/1000 strokes : + 1.0
		+ Check tolerance
GUIDE SLEEVE TRAVEL	_	+ cm3/1000s. : +- 4.0
		+ Spreed
Rated speed rpm :	1223	+ Tolerance
guide sleeve		+ cm3/1000 strokes : 5.0
	10.29	† Check tolerance
Tolerance mm :	+ 0.15	- cm3/1000s. : 9.0
Rated speed rpm :	275	I
guide sleeve	217	
travel mm :	1.56	CONTROL LEVER
	+- 0.20	T CONTINUE ELECTIVE
	0.20	control lever
Rated speed rpm :	822	position degree : 120.0
guide sleeve	- <del></del>	+ tolerance degree : +- 4.0
travel mm :	6.85	+
	+ 0.25	+ RATED SPEED
		+ rack travel mm : 13.65
Rated speed rpm :	300	+ Rated speed rpm : 1207
•		Tolerance 1/min : +- 5

Check speed 1/min	: <del></del> 10
rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 4.00 : 1340 : +- 15 : +- 20
rack travel mm Tolerance mm Rated speed rpm	: +- 0.70
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : ← 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.70 : +- 0.10
Rated speed rpm	: 375
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1130 : 14.65 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 14.65 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1025 : 14.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 850 : 14.20 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 650 : 13.10 : ← 0.10
Rated speed rpm	: 500

rack travel mm	: 12.30
Tolerance mm	: + 0.20
Rated speed rpm	: 600
rack travel mm	: 9.20
Tolerance mm	: + 0.15
Rated speed rpm	: 1150
rack travel mm	: 14.95
Tolerance mm	: + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 1130
Pressure hPa	: 1500
rack travel mm	: 14.65
Tolerance mm	: + 0.05
Rated speed rpm	: 1130
Pressure hPa	: –
rack travel mm	: 9.10
Tolerance mm	: + 0.20
MEASUREMENT	
Rated speed rpm	: 1130
Pressure hPa	: 740
rack travel mm	: 13.05
Tolerance mm	: +- 0.05
Pressure hPa	: 320
rack travel mm	: 10.00
Tolerance mm	: + 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 1500 : 1025 : 14.20 : + 0.10
cm3/1000 strokes	: 235.0
Tolerance cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: ← 6.0

Aneroid pressure hPa : 1500

850 Rated speed rpm Del. quantity cm3/1000 strokes : 256.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +- 5.0 Aneroid pressure 1500 hPa Rated speed rpm 650 Del. quantity cm3/1000 strokes : 250.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Aneroid pressure hPa Rated speed rpm 600 Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

LOW	IDLE

Rated speed rpm 275 Rack travel in mm : 5.70 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s.6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. 12.0 :

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 05.10.98 : ISO 4113

Combination No. : 0 402 670 814

Injection pump

Pump designation: PE12P120A320LS7925

EP type number : 0 412 620 852

Governor

Governer design. : RSV375...950P0A692

Governer no. : 0 421 833 614

Cust. part No. : 0 270 740 702

Customer-spec. information Customer : MB-NFZ : OM 444 LA Motor

Power KW

: 493.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50Tolerance mm : +-0.50

: 12- 1- 5- 9- 8 Firing order

: - 3- 4- 11- 10 : - 2- 6- 7

: 0-45-60-105-120 Phasing

: -165-180-225-240

: -285-300-345

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 13.50 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 930
Del. quantity cm3/1000 strokes : 228.0	Aneroid pressure hPa : 1200 Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 228.0 Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : +- 4.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
Spreed	Tolerance om3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 375	control lever position degree : 91.0 tolerance degree : +- 4.0
Rack travel in mm : 5.00 + Tolerance mm : + 0.10 +	· ·
Del. quantity cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : + 3.0	Rated speed rpm : 978 rack travel mm : 12.50
Check tolerance cm3/1000s. : +- 6.0 + Check tolerance cm3/1000s. : +- 6.0 + Check tolerance cm3/1000s.	Rated speed rpm : 1048 Tolerance 1/min : +- 4 rack travel mm : 4.00
cm3/1000 strokes : 8.0 Check tolerance	rack travel mm : 0.85
cm3/1000s. : 12.0	Tolerance mm : + 0.55 Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 979
‡	rack travel mm : 12.50
GUIDE SLEEVE POSITION	Rated speed rpm : 1049 Tolerance 1/min : +- 4 rack travel mm : 4.00
control lever position degree : -3 Rated speed rpm : 800	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1350
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 980 rack travel mm : 12.50
governor spring pre-tension click setting x : 3.75	Rated speed rpm : 1050 Tolerance 1/min : + 4 rack travel mm : 4.00

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1350
Rated speed rpm	: 981
rack travel mm	: 12.50
Rated speed rpm	: 1051
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1350
Rated speed rpm	: 982
rack travel mm	: 12.50
Rated speed rpm	: 1052
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1350
rack travel mm	: 12.50
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 8.50
Testing:	

rack travel mm	: 2.00	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 930 : 13.50 : +- 0.05	
Rated speed rpm rack travel mm Tolerance mm		
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 13.50 : + 0.10	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.90 : +- 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.70 : ← 0.20	
Pressure hPa rack travel mm Tolerance mm	: 450 : 9.60 : +- 0.05	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 800	
cm3/1000 strokes Tolerance	: 242.0	
cm3/1000 strokes Check tolerance	: ← 3.0	
cm3/1000s. Spreed	: +- 6.0	

SET IDLE AUXILIARY SPRING

Rated speed rpm : 375
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : + 30

: <del>-</del> : 500
. 500
4/2.0
: 142.0
: <b>←</b> 1.0
: ← 4.0
: 8.0
: 12.0
IVERY
: 100
: 240.0
: +- 15.0
: +- 19.0
: 375
: 5.00 : +- 0.10
: 19.0
: <del>+-</del> 3.0
: +- 6.0
: 8.0
: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 25.08.94 : ISO 4113

Combination No. : 0 402 676 810

Injection pump

Pump designation : PE6P120A320RS7138

: -10 EP type number : 0 412 626 922

Governor

Governer design. : RSV350...1050P1A512

: -3

Governer no.

: 0 421 833 334

Cust. part No. : 1309367

Customer-spec. information Customer : SCANIA

Motor

: DS9 60

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240 : -300

Tolerance Check

: +- 0.30

tolerance °NW : +- 0.70

Start of delivery mark

Barrel no. : 1

### BASIC SETTING

Del. quantity

cm3/1000 strokes : 166.0

Tolerance

cm3/1000 strokes : +- 1.0

E02

Check tolerance cm3/1000s.	: +- 4.0	RATED SPEED
Spreed	<del></del> ‡	rack travel mm : 11.20 Rated speed rpm : 1095 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes	: 6.0	Check speed 1/min : +- 10
Check tolerance	: 9.0	rack travel mm : 4.00 Rated speed rpm : 1155
J. 19333 (		Tolerance 1/min : +- 15 Check
Rated speed rpm	: 350	speed 1/min : +- 20
Rack travel in mm Tolerance mm Del. quantity		rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
cm3/1000 strokes Tolerance	: 22.0	
cm3/1000 strokes Check tolerance	: + 2.0	LOW IDLE
cm3/1000s. Spr <del>eed</del>	: +- 4.0	
Tolerance cm3/1000 strokes Check tolerance	: 3.0	control lever position degree : 80.0 tolerance degree : +- 4.0
cm3/1000s.	: 6.0	control lever
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	position degree : 30.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
		Rated speed rpm : 350
GUIDE SLEEVE POSIT	TION	rack travel mm : 4.10 Tolerance mm : +- 0.10
control lever position degree Rated speed rpm	: - 3	Rated speed rpm : 100
	+	CRT mm min. : > 19.50
Rack travel in mm Tolerance mm		Testing:
governor spring pre-tension	† †	Rated speed rpm : 350 rack travel mm : 4.60 Tolerance mm : +- 0.10
click setting x	: 6.00	rack travel mm : 2.00 Rated speed rpm : 475
CONTROL LEVER		Tolerance 1/min : +- 30
control lever position degree tolerance degree		
control lever position degree tolerance degree		STARTING FUEL DELIVERY

Rated speed rpm	: 100
rack travel mm	: 20.50
Tolerance mm	: + <del>-</del> 0.50
Del. quantity	
cm3/1000 strokes	: 295.0
Tolerance	
cm3/1000 strokes	: <del>+-</del> 20.0
Check tolerance	
cm3/1000s.	: +- 24.0

# LOW IDLE

Rated speed rpm	:		350	
Rack travel in mm	:		4.60	
Tolerance mm Del. quantity	:	+	0.10	
cm3/1000 strokes	:		22.0	
Tolerance			2.0	
cm3/1000 strokes Check tolerance	:	+	2.0	
cm3/1000s.	:	+-	4.0	
Spreed				
Tolerance cm3/1000 strokes Check tolerance	:		3.0	
cm3/1000s.	:		6.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94 Test oil : ISO 4113

Combination No. : 0 402 736 830

Injection pump

Pump designation : PES6P110A120RS7263 EP type number : 0 412 716 808

Governor

Governer design. : RQV350...1250PA964

: -11K

Governer no. : 0 421 815 321

Cust. part No. : 3281780

Customer—spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C :  Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.40 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 4.40 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW :  $\leftarrow$  0.50

Start of delivery blocking

\*NW after s.o.d. : 6.50 Tolerance : + 0.10

Check

tolerance °NW : +- 0.23

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.85

E05

Tolerance mm : +- 0.05	+ guide sleeve
Del. quantity	+ travel mm : 1.77 + Tolerance mm : + 0.25
cm3/1000 strokes : 152.0	+ Ocerance min
	+ Rated speed rpm : 403
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.42
Check tolerance	Tolerance mm : +- 0.25
cm3/1000s. : +- 4.0	Rated speed rpm : 460
	+ guide sleeve
Spreed	travel mm : 2.82
Tolerance	Tolerance mm : + 0.25
cm3/1000 strokes : 5.0	Rated speed rpm : 1620
ths/1000 strokes	+ guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 9.0	† Tolerance mm : +- 0.50
	†
	GUIDE SLEEVE POSITION
Rated speed rpm : 350	+
·	+
Rack travel in mm: 5.00	+ control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity cm3/1000 strokes : 26.0	Rated speed rpm : 1440
Tolerance	Rack travel in mm: 9.00
cm3/1000 strokes : +- 3.0	Tolerance mm : +- 3.00
011137 1000 3 CT CTC3 1 · 3.0	i rocci anicc inii . · J. dd
Check tolerance	
Check tolerance cm3/1000s. : +- 5.0	
cm3/1000s. : + 5.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : +- 5.0 Spreed Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : \( + \) 1.0
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : \( \dagger \) 1.0 Check tolerance cm3/1000s. : \( \dagger \) 4.0 Spreed Tolerance
cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.94	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.94 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever position degree : 63.0
Cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1316 guide sleeve travel mm : 8.13 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.94 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever
Spreed Tolerance cm3/1000 strokes: 7.0 Check tolerance cm3/1000s: 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 1316 guide sleeve travel mm: 8.13 Tolerance mm: + 0.25  Rated speed rpm: 350 guide sleeve travel mm: 1.94 Tolerance mm: + 0.25  Rated speed rpm: 826 guide sleeve travel mm: 4.51	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever position degree : 63.0 tolerance degree : + 4.0  control lever
Spreed Tolerance cm3/1000 strokes: 7.0 Check tolerance cm3/1000s: 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 1316 guide sleeve travel mm: 8.13 Tolerance mm: + 0.25  Rated speed rpm: 350 guide sleeve travel mm: 1.94 Tolerance mm: + 0.25  Rated speed rpm: 826 guide sleeve guide sleeve travel mm: 1.94 Tolerance mm: + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 63.0 tolerance degree : + 4.0  control lever position degree : 121.0
Spreed Tolerance cm3/1000 strokes: 7.0 Check tolerance cm3/1000s: 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm: 1316 guide sleeve travel mm: 8.13 Tolerance mm: + 0.25  Rated speed rpm: 350 guide sleeve travel mm: 1.94 Tolerance mm: + 0.25  Rated speed rpm: 826 guide sleeve travel mm: 4.51	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 152.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever position degree : 63.0 tolerance degree : + 4.0  control lever

	1
RATED SPEED rack travel mm : 13.50 Rated speed rpm : 1310 Tolerance 1/min : +- 5	+ COMPENSATOR TEST
rack travel mm : 4.00 Rated speed rpm : 1450	SETTING
Tolerance 1/min : +- 15	Rated speed rpm : 1250 Pressure hPa : 1200
rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1600	
nacea opeca i più i i i i i i i	Rated speed rpm : 1250 Pressure hPa : -
LOW IDLE	MEASUREMENT
control lever	Rated speed rpm : 1250
position degree : 72.0	
tolerance degree : + 4.0	rack travel mm : 11.30 Tolerance mm : + 0.20
control lever	T (Otter an ite min) . T = 0.20
position degree : 17.0	
tolerance degree : +- 4.0	
Setting point w/out bumper s	pring + Tolerance mm : +- 0.05
Rated speed rpm : 250	Start interlock
CRT mm min. : > 6.50	Rated speed rpm : > 100 Rated speed rpm : < 270
Testing:	+
Rated speed rpm : 350	+ Check
Rated speed rpm : 350 rack travel mm : 5.00	+ speed 1/min : > 80 + Check
Tolerance mm : +- 0.10	
Rated speed rpm : 375	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL Rated speed rpm : 1100	Anamaid processes
rack travel mm : 13.85	+ Aneroid pressure + hPa · 1200
Tolerance mm : + 0.05	hPa : 1200 + Rated speed rpm : 750
	∔ Del. quantity
Rated speed rpm : 750	+ cm3/1000 strokes : 154.0
rack travel mm : 12.40 Tolerance mm : + 0.10	+ Tolerance + cm3/1000 strokes : +- 3.0
Total and the second	+ Check tolerance
Rated speed rpm : 1250	+ cm3/1000s. : +- 6.0
rack travel mm : 14.50	+ Spreed
Tolerance mm : + 0.10	+ Tolerance + cm3/1000 strokes : 8.0
Rated speed rpm : 400	+ Check tolerance
rack travel mm : 11.65 Tolerance mm : + 0.15	+ cm3/1000s. : 12.0
Tolerance mm : +- 0.15	+
	+

rack travel mm : 14.50 Tolerance mm : + 0.10

Aneroid pressure

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 116.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 12.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  24.0

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : + 0.10
Del. quantity

cm3/1000 strokes : 26.0 Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. :  $\leftarrow$  5.0

Spreed

Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 11.07.95 : ISO 4113

Combination No. : 0 402 736 859

Injection pump

Pump designation : PES6P120A120RS7261 EP type number : 0 412 726 876

Governor

Governer design. : RQV350...1100PA924

: -10K

Governer no. : 0 421 815 429

Cust. part No. : 3282465

Customer-spec. information

Customer : CUMMINS Motor : 6CTAA Power KW : 176.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.55 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00

Barrel no. :

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 145.0

E09

Tolerance + cm3/1000 strokes : +- 1.0 +	Spreed Tolerance
Check tolerance	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : +- 4.0	cm3/1000s. : 9.0
Spreed	
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance	control lever position degree : 57.0
cm3/1000s. : 9.0	tolerance degree : +- 4.0
‡	control lever position degree : 113.0
Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm: 5.10	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 9.80
Del. quantity + cm3/1000 strokes : 26.0 +	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : + 3.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1255
cm3/1000s. : +- 5.0 +-	Tolerance 1/min : +- 15
Tolerance	rack travel mm : 0.50
cm3/1000 strokes : 7.0	Tolerance mm : + 0.50
Check tolerance + cm3/1000s. : 11.0 +	Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	ŁOW IDLE
WITH GOVERNOR	EOM IDEE
	control lever
GUIDE SLEEVE POSITION +	position degree : 68.0
Ĭ	tolerance degree : +- 4.0
control lever	control lever
position degree : -1	position degree : 17.0
Rated speed rpm : 1400	tolerance degree : +- 4.0
Rack travel in mm : 9.00 Tolerance mm : +- 3.00	Setting point w/out bumper spring
<u> </u>	Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 6.60
Rated speed rpm : 1100 Aneroid pressure	Testing:
hPa : 900	Rated speed rpm : 350
Del. quantity	rack travel mm : 5.10
cm3/1000 strokes : 145.0 +	Tolerance mm : +- 0.10
cm3/1000 strokes : + 1.0 + Check tolerance	Rated speed rpm : 400
cm3/1000s. : + 4.0	

		+
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 10.85	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure
		+ hPa : 900
Rated speed rpm rack travel mm Tolerance mm	: 10.00	Rated speed rpm : 700  Del. quantity  cm3/1000 strokes : 150.0
		† Tolerance
Rated speed rpm rack travel mm	: 10.35	+ cm3/1000 strokes : +- 3.0 + Check tolerance
Tolerance mm	: ← 0.15	cm3/1000s. : +- 6.0 Spreed
Rated speed rpm rack travel mm	: 9.15	Tolerance cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.15	Check tolerance cm3/1000s. : 12.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ rack travel mm : 10.35 + Tolerance mm : + 0.15
SETTING		Aneroid pressure
Rated speed rpm	: 1100	→ hPa : -
Rated speed rpm Pressure hPa rack travel mm	: 900 : 10.85	Rated speed rpm : 500 Del. quantity
Tolerance mm	: +- 0.05	cm3/1000 strokes : 107.0 Tolerance
Rated speed rpm Pressure hPa	: 1100	cm3/1000 strokes : +- 2.0 Check tolerance
rack travel mm Tolerance mm	•	cm3/1000s. : + 4.0
MEASUREMENT		STARTING FUEL DELIVERY
Rated speed rpm	: 1100	Rated speed rpm : 100
Pressure hPa	: 320	+ Del. quantity
rack travel mm Tolerance mm	: 8.50 : + 0.20	cm3/1000 strokes : 265.0 Tolerance
Pressure hPa	: 560	+ cm3/1000 strokes : +- 15.0 + Check tolerance
rack travel mm Tolerance mm	: 10.25 : + 0.05	+ cm3/1000s. : ← 19.0
Start interlock		
Rated speed rpm	: > 100	LOW IDLE
Rated speed rpm	: < 270	Rated speed rpm : 350
Check speed 1/min	: > 80	Rack travel in mm : 5.10 Tolerance mm : + 0.10
Check		+ Del. quantity
speed 1/min	: < 290	+ cm3/1000 strokes : 26.0 + Tolerance
		+ cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s.

: +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.02.95 Test oil : ISO 4113

Combination No. : 0 402 736 863

Injection pump

Pump designation : PES6P120A120RS7206 EP type number : 0 412 726 835

Governor

Governer design. : RQV350...1100PA924

: -12K

Governer no. : 0 421 815 433

Cust. part No. : 3282473

Customer—spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 202.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 90
Tolerance L/h : + 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : + 1.0

Prestroke mm : 3.55 Tolerance mm : ← 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

tolerance °NW : +- 0.23

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1100

		1		
Rack travel in mm Tolerance mm	: 12.15 : ← 0.05	+	Rated speed rpm guide sleeve	
Del. quantity cm3/1000 strokes	: 159.0		travel mm Tolerance mm	: 1.98 : ← 0.25
Tolerance cm3/1000 strokes	: + 1.0	+	Rated speed rpm guide sleeve travel mm	: 449 : 2.54
Check tolerance		‡	Tolerance mm	: +- 0.25
	: +- 4.0	+	Rated speed rpm guide sleeve	
Spreed 		1	travel mm Tolerance mm	: 3.56 : +- 0.25
Tolerance cm3/1000 strokes	: 5.0		Rated speed rpm guide sleeve	: 1550
Check tolerance cm3/1000s.	: 9.0	•	travel mm Tolerance mm	: 13.50 : +- 0.50
		1	GUIDE SLEEVE POSI	TTON
Rated speed rpm	: 350	1	SOLDE SECENC 1031	11014
Rack travel in mm Tolerance mm Del. quantity	: 5.30 : + 0.10	+ 1	control lever position degree Rated speed rpm	
cm3/1000 strokes Tolerance	: 26.0	+	•	
cm3/1000 strokes Check tolerance	: +- 3.0	1	Rack travel in mm Tolerance mm	
	: +- 5.0	Į.	FULL LOAD DELIVER	Y AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 7.0	+	Rated speed rpm	: 1100
Check tolerance	: 11.0	+ /	Aneroid pressure	: 1200
CIII37 10003.	. 11.0	+ i	Del. quantity	
(B) SETTING OF INJE	ECTION PUMP	+ -	cm3/1000 strokes Tolerance cm3/1000 strokes	: 159.0 : +- 1.0
		+ (	Check tolerance cm3/1000s.	: +- 4.0
GUIDE SLEEVE TRAVEL	-	+ :	Spreed Folerance	4.0
Rated speed rpm : guide sleeve	1157	+ (	cm3/1000 strokes Check tolerance	: 5.0
travel mm :	8.60 +- 0.25		cm3/1000s.	: 9.0
Rated speed rpm : guide sleeve	350	<u> </u>	CONTROL LEVER	<del></del>
travel mm :	1.36 + 0.25	‡ ,	control lever	<b>P</b>
Rated speed rpm :	820		osition degree colerance degree	: 59.0 : +- 4.0
guide sleeve travel mm :	5.90		control lever	
Tolerance mm :	<b>←</b> 0.25	+ #	position degree	: 117.0

tolerance degree : +- 4.0 +	
RATED SPEED rack travel mm : 11.10 Rated speed rpm : 1145 Tolerance 1/min : +- 5	ANEROID/ALTITUDE COMPENSATOR TEST SETTING
rack travel mm : 4.00 Rated speed rpm : 1275 Tolerance 1/min : + 15	Rated speed rpm : 1100 Pressure hPa : 1200 rack travel mm : 12.15
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350	Tolerance mm : + 0.05  Rated speed rpm : 1100  Pressure hPa : - rack travel mm : 8.10
LOW IDLE	Tolerance mm : + 0.20 MEASUREMENT
	Rated speed rpm : 1100
control lever position degree : 73.0 tolerance degree : +- 4.0	Pressure hPa : 300 rack travel mm : 8.90 Tolerance mm : +- 0.20
control lever position degree : 14.0 tolerance degree : + 4.0	Pressure hPa : 600 rack travel mm : 11.20 Tolerance mm : + 0.10
Setting point w/out bumper spring	
Rated speed rpm : 250	Start interlock
CRT mm min. : > 6.80	Rated speed rpm : > 100 Rated speed rpm : < 270
Rated speed rpm : 350 rack travel mm : 5.30 Tolerance mm : + 0.10	Check speed 1/min : > 80 Check speed 1/min : < 290
Rated speed rpm : 450	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 12.15 Tolerance mm : + 0.05  Rated speed rpm : 600 rack travel mm : 11.20 Tolerance mm : + 0.10	Aneroid pressure hPa : 1200 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 3.0
Rated speed rpm : 800 + rack travel mm : 11.80 + Tolerance mm : +- 0.10	Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
1	cm3/1000s. : 12.0

Aneroid pressure

hPa : -Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 107.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. :  $\leftarrow$  24.0

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.30
Tolerance mm: + 0.10
Del. quantity

cm3/1000 strokes : 26.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 5.0

Spreed Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 29.09.98
Test oil

Combination No. : 0 402 744 809

Injection pump

Pump designation : PES4P120A320RS7312

: -1

EP type number : 0 412 724 803

Governor

Governer design. : RQV400...1200PA1397

Governer no. : 0 421 814 212

Cust. part No. : 51.11103-7579

Customer-spec. information

Customer : MAN

Motor : D 0824 LOH 05

Power KW

: 114.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: ← 2.0

Overflow valve : 2 417 413 025

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Overflow quantity

min. L/h : 120 Tolerance L/h : + 20.0

Test nozzle holde assembly

: 1 688 901 103

Opening pressure

bar

Tolerance bar : + 1.5

: 208.5

E17

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm 5.25

Tolerance mm : ← 0.05

tolerance mm : + 0.10

Firing order : 1-3-4-2

Phasing

: 0-90-180-270

Tolerance

: +- 0.50

Check

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance

: + 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.20

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes	: 208.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 4.0
Rated speed rpm	: 400
Rack travel in mr Tolerance mm	n: 4.70 : + 0.10
Del. quantity cm3/1000 strokes Tolerance	: 40.0
cm3/1000 strokes	: <del>+-</del> 3.0
Check tolerance cm3/1000s.	: <b>←</b> 6.0
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP
GUIDE SLEEVE TRAV	/EL
Rated speed rpm guide sleeve travel mm	
	: 10.26 : +- 0.15
Tolerance mm	0.15
Rated speed rpm guide sleeve	
Rated speed rpm	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 2.21
Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 2.21 : ← 0.20
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 2.21 : ← 0.20 : 822 : 5.79
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 2.21 : ← 0.20 : 822 : 5.79 : ← 0.25
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 2.21 : ← 0.20 : 822 : 5.79 : ← 0.25 : 500 : 3.53
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 400 : 2.21 : ← 0.20 : 822 : 5.79 : ← 0.25 : 500 : 3.53 : ← 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 208.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 CONTROL LEVER control lever position degree : 302.0 tolerance degree : + 4.0 RATED SPEED rack travel mm : 12.20 Rated speed rpm : 1250 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 1345
Tolerance 1/min : + 15 Rated speed rpm : 1450 LOW IDLE control lever position degree : 262.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 300 CRT mm min. :> 7.00Testing: Rated speed rpm : 400 rack travel mm : 4.70 Tolerance mm : +-0.10Rated speed rpm : 425

Tolerance mm : +- 1.30

Rated speed rpm : 1330

Rack travel in mm : 12.20

		- <u> </u>
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 13.20 : ← 0.05	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 13.20	hPa : 1200 Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 208.0
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.20 : ← 0.10	Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolerance mm	: 5.00	Aneroid pressure hPa : 1200 Rated speed rpm : 700 rack travel mm : 13.20
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 216.0
SETTING		+ Tolerance + cm3/1000 strokes : +- 3.0 + Check tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200	cm3/1000s. : + 6.0  Aneroid pressure
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : – : 8.95 : + 0.20	hPa : - Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 70.0 Tolerance
MEASUREMENT		cm3/1000 strokes : + 4.0 Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : +- 8.0 + Spreed + Tolerance
Pressure hPa rack travel mm Tolerance mm	: 450 : 12.20 : ← 0.20	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Pressure hPa rack travel mm Tolerance mm	: 200 : 9.80 : +- 0.20	Aneroid pressure hPa : - Rated speed rpm : 500
Start interlock		Del. quantity cm3/1000 strokes : 136.0 Tolerance
Rated speed rpm Rated speed rpm		cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Check speed 1/min Check	: > 270	‡ <u></u>
speed 1/min	: < 340	STARTING FUEL DELIVERY
		+ Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 215.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. :  $\leftarrow$  19.0

# LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.70 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.03.95 : ISO 4113

Combination No. : 0 402 746 938

Injection pump

Pump designation : PES6P120A720RS7269

EP type number : 0 412 726 885

Governor

Governer design. : RQ310/1025PA872-1

Governer no. : 0 421 801 672

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor

: 8460.21.613

### TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C

Tolerance °C

: 40 : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 1.05

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

```
x length mm : 600
REMARKS
```

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 13.50 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 197.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0	Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 5.0	RATED SPEED rack travel mm : 12.00 Rated speed rpm : 1078
Check tolerance cm3/1000s. : 9.0	Tolerance 1/min : + 8 rack travel mm : 4.00
Rated speed rpm : 310	Rated speed rpm : 1195 Tolerance 1/min : +- 15
Rack travel in mm : 5.80 - Tolerance mm : + 0.10 - Del. quantity -	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1350
cm3/1000 strokes : 23.0 - Tolerance -	
cm3/1000 strokes : + 3.0 - Check tolerance cm3/1000s. : + 6.0 -	LOW IDLE
Spreed - Tolerance - cm3/1000 strokes : 8.0 - Check tolerance -	control lever position degree : 73.0 tolerance degree : +- 4.0
cm3/1000s. : 12.0	Setting point w/out bumper spring
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 100
	CRT mm min. : > 7.30 Testing:
GUIDE SLEEVE POSITION	- Rated speed rpm : 310 - rack travel mm : 5.80
control lever - position degree : 109 -	Tolerance mm : + 0.10
Rated speed rpm : 600 -	rack travel mm : 2.00 Rated speed rpm : 445 Tolerance 1/min : +- 20
Rated speed rpm : 600 - Rack travel in mm : 20.00 - Tolerance mm : + 0.80 -	Rated speed rpm : 445 Tolerance 1/min : + 20
Rack travel in mm : 20.00 Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 445 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 13.50
Rack travel in mm : 20.00 Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1025 Aneroid pressure	Rated speed rpm : 445 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 13.50 Tolerance mm : + 0.05
Rack travel in mm : 20.00 Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1025 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 197.0	Rated speed rpm : 445 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 13.50
Rack travel in mm : 20.00 Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1025 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 445 Tolerance 1/min : + 20  TORQUE CONTROL Rated speed rpm : 1025 rack travel mm : 13.50 Tolerance mm : + 0.05  Rated speed rpm : 550 rack travel mm : 13.55

rack travel mm : 13.05 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.60 Tolerance mm : ← 0.40

### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180 rack travel mm : 10.70 Tolerance mm : + 0.10

Pressure hPa : 260 rack travel mm : 12.20 Tolerance mm : + 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 219.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : <del>←</del> 6.0

rack travel mm : 13.00 Tolerance mm : + 0.05

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 124.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. :  $\leftarrow$  4.0

# STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated. rack must reach start position in max. control lever setting.

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

### LOW IDLE

Rated speed rpm : 310

Rack travel in mm : 5.80 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 23.0 Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 8.0 Check tolerance : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.02.98
Test oil : 750 /67

Combination No. : 0 402 846 064

Injection pump

Pump designation : PE6P120A320RS8030 EP type number : 0 412 826 030

Governor

Governer design. : RQV300...1100PA1017

: -2

: 0 421 814 102 Governer no.

Cust. part No. : 3825157-P04 v.05.96

Customer-spec. information Customer : PENTA Motor : TWD 1230 E Power KW : 275.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 4.15 Tolerance mm : +- 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 8.10 Tolerance mm : + 0.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

# Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

### BASIC SETTING

Rated speed rpm : 700

		1
Rack travel in mm Tolerance mm	n: 11.90 : ← 0.05	Rated speed rpm : 385 guide sleeve
Del. quantity cm3/1000 strokes	: 277.0	+ travel mm : 1.98 - Tolerance mm : + 0.25
Tolerance cm3/1000 strokes	: +- 1.0	Rated speed rpm : 435 guide sleeve travel mm : 2.45
Check tolerance		Tolerance mm : + 0.25
cm3/1000s.	: + 4.0	Rated speed rpm : 530 guide sleeve
Spreed		+ travel mm : 3.11 + Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: 8.0	Rated speed rpm : 1400
Check tolerance cm3/1000s.	: 11.0	travel mm : 11.50 Tolerance mm : + 0.50
		GUIDE SLEEVE POSITION
Rated speed rpm	: 325	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: + 0.10	control lever position degree : - 1 Rated speed rpm : 1250
Tolerance cm3/1000 strokes Check tolerance		Rack travel in mm : 9.00 Tolerance mm : + 3.00
cm3/1000s. Spreed	: ← 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes Check tolerance	: 5.0	Rated speed rpm : 700
cm3/1000s.	: 8.0	+ Aneroid pressure + hPa : 1800 + Del. quantity
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	cm3/1000 strokes : 277.0 Tolerance
WITH GOVERNOR		cm3/1000 strokes : +- 1.0 Check tolerance + cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVE	EL	Spreed Tolerance
Rated speed rpm guide sleeve	: 1182	cm3/1000 strokes : 8.0 Check tolerance
travel mm Tolerance mm	: 8.71 : ← 0.25	cm3/1000s. : 11.0
Rated speed rpm guide sleeve	: 325	CONTROL LEVER
travel mm Tolerance mm	: 1.41 : +- 0.25	control lever
Rated speed rpm guide sleeve	: 834	<pre>position degree : 46.0 tolerance degree : +- 4.0</pre>
travel mm Tolerance mm	: 5.40 : ← 0.25	control lever position degree : 112.0

tolerance degree : +- 4.0 +	
RATED SPEED	Rated speed rpm : 500 Pressure hPa : -
rack travel mm : 10.90 + Rated speed rpm : 1080 +	Pressure hPa : - rack travel mm : 8.10 Tolerance mm : + 0.20
Tolerance 1/min : +- 5	
rack travel mm : 4.00 +	MEASUREMENT
Rated speed rpm : 1190 + Tolerance 1/min : + 15	Rated speed rpm : 500
+	Pressure hPa : 1080
rack travel mm : 0.50 + Tolerance mm : +- 0.50 +	Pressure hPa : 1080 rack travel mm : 3.50 Tolerance mm : +- 0.20
Tolerance mm : +- 0.50 Rated speed rpm : 1300	Pressure hPa : 350
Ţ	rack travel mm : 0.25 Tolerance mm : + 0.05
	Tolerance mm : + 0.05
LOW IDLE	
+	FUEL DELIVERY CHARACTERISTICS
control lever + position degree : 82.0 +	
tolerance degree : +- 4.0	Aneroid pressure hPa : -
control lever	Rated speed rpm : 700
position degree : 12.0 + tolerance degree : + 4.0 +	Del. quantity cm3/1000 strokes : 165.0
toterance degree : +- 4.0	Tolerance
Setting point w/out bumper spring	cm3/1000 strokes : +- 1.0 Check tolerance
control lever position degree : 12.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 225	cm3/1000s. : +- 4.0
CRT mm min. : > 7.20 +	
Testing:	STARTING FUEL DELIVERY
+	
Rated speed rpm : 325 + rack travel mm : 4.60 +	Rated speed rpm : 100 rack travel mm : 8.10
Tolerance mm : + 0.10	Tolerance mm : +- 0.20
Rated speed rpm : 360 +	Del. quantity cm3/1000 strokes : 120.0
Harea speed (pii)	Tolerance
TORQUE CONTROL	cm3/1000 strokes : +- 21.0 Check tolerance
Rated speed rpm : 700	cm3/1000s. : +- 25.0
rack travel mm : 11.90 + Tolerance mm : + 0.05 +	
+	
ANEROID/ALTITUDE	LOW IDLE
COMPENSATOR TEST	Rated speed rpm : 325
SETTING	Rack travel in mm : 4.60 Tolerance mm : +- 0.10
Rated speed rpm : 500	Del. quantity
Pressure hPa : 1800 + rack travel mm : 11.90 +	cm3/1000 strokes : 20.0 Tolerance
Tolerance mm : + 0.05	cm3/1000 strokes : +- 2.5
·	

Check tolerance cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.10.98 Edition Test oil : ISO 4113

Combination No. : 0 403 476 042

Injection bump

Pump designation : PES6MW100/320RS1132

EP type number : 0 413 406 124

Governor

Governer design. : RSV325...1250MW2A308

: -6

Governer no. : 0 420 085 186

Cust. part No. :

Customer-spec. information

Customer : VOLVO-PENTA Motor : TD 61 APP : 147.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 2.0

x inside diameter: 6.0 x Length mm :

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

# BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.00 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 87.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 3.0

Spreed

Rated speed rpm : 325  Rated speed rpm : 325  Rack travel in mm : 6.15 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 5.5  Rated speed rpm : 1.00 Tolerance 1/min : + 5  Tolerance 1/min : + 15  Tolerance 1/min : + 0.70  Rated speed rpm : 1.00  Tolerance 1/min : + 0.70  Rated speed rpm : 1.00  Tolerance 1/min : + 0.70  Rated speed rpm : 1.00  Tolerance 1/min : + 0.70  Rated speed rpm : 1.00  Tolerance mm : + 0.70  Rated speed rpm : 1.00  Control lever position degree : 76.0  tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  Tolerance mm : + 0.05	Tolerance - cm3/1000 strokes : 3.5 -	Check tolerance cm3/1000s. : 6.0
Rated speed rpm : 325  Rack travel in mm : 6.15 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 5.5  Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000s. : 5.5  Check tolerance cm3/1000s. : 6.15  Tolerance cm3/1000s. : 6.15  Tolerance check tolerance ch	Check tolerance - cm3/1000s. : 6.0 -	
Rated speed rpm : 325		
Rack travel in mm : 6.15 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : - 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : - 3 Rated speed rpm : 1000 Rack travel in mm : 0.65 Tolerance mm : + 0.35 CRT mm min. : > 19.00  Tolerance mm : + 0.05 Tolerance mm : + 0.05  Tolerance mm : + 0.05 Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05  Tolerance mm : + 0.05	Rated speed rpm : 325	position degree : 106.0
Cm3/1000 strokes : 14.0   Rated speed rpm : 1295   Tolerance cm3/1000 strokes : + 2.0   Tolerance 1/min : + 5   Tolerance 1/min : + 15   Tolerance mm : + 0.70   Tolerance 1/min : + 15   Tolerance mm : + 0.70   Tolerance mm :	Tolerance mm : $+$ 0.05 -	RATED SPEED
cm3/1000 strokes : + 2.0       check tolerance cm3/1000s. : + 4.5       rack travel mm : 4.00       rack travel mm : 1355       rack travel mm : 1.00       rack travel mm : + 15       rack travel mm : 1.00       rack travel mm : + 10       rack travel mm : 1.00       rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : 1.00       rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : 1.00        rack travel mm : + 0.70       rack travel mm : 1.00       rack travel mm : - 0.70       rack travel mm : 1.00       rack travel mm : - 0.70        rack travel mm : - 0.70       rack travel mm : - 0.70       rack travel mm : - 0.70       rack travel mm : - 0.70       rack travel mm : - 0.70        rack travel mm : - 0.70       rack travel mm : - 0.70       rack travel mm : - 0.00        rack travel mm : - 0.05        rack travel mm : - 0.05<	cm3/1000 strokes : 14.0	- Rated speed rpm : 1295
cm3/1000S.       : ← 4.5         Spreed       Tolerance         Tolerance       15         Check tolerance       700         cm3/1000S.       : 5.5         CB) SETTING OF INJECTION PUMP WITH GOVERNOR       LOW IDLE         CUIDE SLEEVE POSITION       Control lever position degree : 76.0 tolerance degree : + 4.0         control lever position degree : -3 Rated speed rpm : 800       Setting point w/out bumper spring         Rack travel in mm : 0.65 Tolerance mm : + 0.35       CRT mm min. : > 19.00         governor spring pre-tension click setting x : 3.20       Testing:         FULL LOAD DELIVERY AT FULL LOAD STOP       Rated speed rpm : 1000 Aneroid pressure hPa in pack travel mm : 6.15 Tolerance mm : + 0.05         FULL LOAD Strokes : + 1.0 Check tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 3.0       Spreed         Spreed Tolerance       STARTING FUEL DELIVERY	cm3/1000 strokes : +- 2.0	
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  COULDE SLEEVE POSITION  CONTrol lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  Governor spring pre-tension click setting x : 3.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000  Tolerance mm : + 0.05	cm3/1000s. : + 4.5 Spreed	Rated speed rpm : 1355
Cm3/1000S. : 5.5  Rated speed rpm : 1450  CB) SETTING OF INJECTION PUMP WITH GOVERNOR  COUNTRY CONTROL	cm3/1000 strokes : 3.5	rack travel mm : 1.00
WITH GOVERNOR  GUIDE SLEEVE POSITION  control lever position degree : 76.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  GOVERNOR  Rack travel in mm : 0.65 Tolerance mm : + 0.35  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Tolerance mm : + 0.05  FULL Quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance  STARTING FUEL DELIVERY  TOLE control lever position degree : 76.0 Tole ance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 1000  Rated speed rpm : 1000  Rated speed rpm : 325 rack travel mm : 6.15 Tolerance mm : + 0.05		
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.20  Rated speed rpm : 1000  Rated speed rpm : 325 FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000  Aneroid pressure hPa : - Del, quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance  Tolerance  Tolerance mm : 76.0  Setting point w/out bumper spring Rated speed rpm : 100  Rated speed rpm : 100  Tolerance mm : 4.0  Tolerance mm : 4.0  ToRQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.00 Tolerance mm : + 0.05  STARTING FUEL DELIVERY		LOW IDLE
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 3.20  Rated speed rpm : 325 rack travel mm : 6.15 Tolerance mm : + 0.05  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : -	GUIDE SLEEVE POSITION	- position degree : 76.0
Rack travel in mm : 0.65 Tolerance mm : + 0.35  Governor spring pre-tension click setting x : 3.20  Rated speed rpm : 325 rack travel mm : 6.15 Tolerance mm : + 0.05  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Rated speed rpm : 1000 pel. quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.00 Tolerance mm : + 0.05  STARTING FUEL DELIVERY	position degree : -3	- Setting point w/out bumper spring
governor spring pre-tension click setting x : 3.20		•
Rated speed rpm : 325 rack travel mm : 6.15 Tolerance mm : + 0.05  Rated speed rpm : 1000 Aneroid pressure hPa : - Rated speed rpm : 1000 hPa : - Rated speed rpm : 1000 pel. quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance  STARTING FUEL DELIVERY	+	•
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : -	pre-tension +	Rated speed rpm : 325 rack travel mm : 6.15
Aneroid pressure  hPa : -	FULL LOAD DELIVERY AT FULL LOAD STOP	
Check tolerance cm3/1000S. : + 3.0 Spreed Tolerance - STARTING FUEL DELIVERY	Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0	Rated speed rpm : 1000 rack travel mm : 11.00
Tolerance + STARTING FUEL DELIVERY	cm3/1000 strokes : + 1.0 + Check tolerance cm3/1000s. : + 3.0 +	
Rated speed rpm : 100		

rack travel mm	-		20.00
Tolerance mm	:	+-	1.00
Del, quantity			
cm3/1000 strokes	:		150.0
Tolerance			
cm3/1000 strokes	:	+-	10.0
Check tolerance			
cm3/1000s.	:	+-	13.0

# LOW IDLE

Rated speed rpm	:	325
Rack travel in mm Tolerance mm	: +-	6.15 0.05
Del. quantity cm3/1000 strokes Tolerance	:	14.0
cm3/1000 strokes Check tolerance	: +	2.0
cm3/1000s. Spreed	: +-	4.5
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s.	:	5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.10.98 : ISO 4113

Combination No. : 0 403 476 048

Injection pump

Pump designation : PES6MW100/320RS1135

EP type number : 0 413 406 127

Governor

Governer design. : RSV325...1250MW2A308

: -3

Governer no. : 0 420 085 057

Cust. part No. :

Customer-spec. information

Customer : VOLVO-PENTA

Motor

: TD 61 AW

Power KW : 125.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

REMARKS

x inside diameter :

x length mm : 600

(A) INJECTION PUMP SETTING VALUES

2.0

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 2.95 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.20

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 89.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0	+ Check tolerance + cm3/1000s. : 6.0
Spreed	<del></del> I
Tolerance cm3/1000 strokes : 3.0	RATED SPEED  rack travel mm : 10.20 Rated speed rpm : 1295 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : 6.0	rack travel mm : 4.00 Rated speed rpm : 1355
Rated speed rpm : 325	rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rpm : 1450
Rack travel in mm : 8.75 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 19.0	† †
Tolerance	LOW IDLE
cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5	Testing:
<pre>cm3/1000S. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5</pre>	Rated speed rpm : 325 rack travel mm : 8.75 Tolerance mm : + 0.05
Check tolerance cm3/1000s. : 5.5	+
(B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE POSITION	TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 11.20 Tolerance mm : +- 0.05  Rated speed rpm : 1000 rack travel mm : 11.20 Tolerance mm : +- 0.10
control lever position degree : - 3	
governor spring	+ FUEL DELIVERY CHARACTERISTICS
pre-tension click setting x : 4.00	Aneroid pressure  hPa : -  Rated speed rpm : 1000
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 700 Aneroid pressure	Tolerance cm3/1000 strokes : + 2.0
hPa : - Del. quantity	+ Check tolerance cm3/1000s. : ← 4.0
<pre>cm3/1000 strokes : 89.0 Tolerance cm3/1000 strokes : +- 1.0</pre>	+ Spreed + Tolerance + cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : +- 3.0	+ cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000s. : 7.0
Spreed Tolerance	T (1115) 10003
cm3/1000 strokes : 3.0	Ţ

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0

#### LOW IDLE

Rated speed rpm : 325 Rack travel in mm: 8.75 Tolerance mm : + 0.05 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance : +- 4.5 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance 5.5 cm3/1000s.

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.10.98 tartion : U1.1U.98
Test oil : ISO 4113

Combination No. : 0 403 476 096

Injection pump

Pump designation : PES6MW100/320RS1132

EP type number : 0 413 406 124

Governor

Governer design. : RSV650...750MW4A311

: -4

Governer no. : 0 420 085 161

Cust. part No. :

Customer-spec. information Customer : PENTA : TD 61 AG Motor

: 93.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

Check tolerance °NW

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 122.0

Tolerance cm3/1000 strokes : +- 2.0

: +- 0.75

x inside diameter: 2.0 x length mm : 600

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

Test pressure bar: 31.0

Tolerance bar : + 1.0

Prestroke mm : 2.95 Tolerance mm : + 0.05

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: -300

: +- 0.50

: 0-60-120-180-240

per values \_\_\_\_\_

BEGINNING OF DELIVERY

REMARKS

Check

Phasing

Tolerance

Start of delivery mark

Barrel no. : 1

F06

Check tolerance	† Check tolerance
cm3/1000s. : +- 4.0	+ cm3/1000s. : +- 4.0
Spreed	+ Spreed + Tolerance
opi cca	- cm3/1000 strokes : 3.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 3.0	+ cm3/1000S. : 5.0
Check tolerance	I
cm3/1000s. : 5.0	
	+ CONTROL LEVER
	t control lever
Rated speed rpm : 650	position degree : 87.0
	tolerance degree : +- 4.0
Rack travel in mm: 6.20	TATES COURS
Tolerance mm : ← 0.20 Del. quantity	+ RATED SPEED + rack travel mm : 10.80
cm3/1000 strokes : 19.0	+ Rated speed rpm : 750
Tolerance	+ Tolerance 1/min : + 2
cm3/1000 strokes : +- 2.0	+
Check tolerance	+ rack travel mm : 4.00
cm3/1000s. : +- 4.5	+ Rated speed rpm : 781 + Tolerance 1/min : + 7
Spreed Tolerance	Toterance than : +- /
cm3/1000 strokes : 3.5	rack travel mm : 1.00
Check tolerance	Tolerance mm : + 0.70
cm3/1000s. : 5.5	+ Rated speed rpm : 950
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 813
WITH GOVERNOR	+ Tolerance 1/min : +- 7
	ACCEMBLY COVERNOR CETTAIN
	ASSEMBLY GOVERNOR SETTING
GUIDE SLEEVE POSITION	Rated speed rpm : 748
	rack travel mm : 10.80
control lever	Rated speed rpm : 778
position degree : - 3	Tolerance 1/min : +- 5
Rated speed rpm : 800	+ rack travel mm : 4.00
	†
Rack travel in mm : 0.65 Tolerance mm : + 0.35	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
Toterance mm : T 0.55	+ Rated speed rpm : 950
governor spring	That car speca i piii
pre-tension	+
click setting x : 4.00	+ Rated speed rpm : 749
	rack travel mm : 10.80
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 779
	+ Tolerance 1/min : + 5
Rated speed rpm : 700	rack travel mm : 4.00
Aneroid pressure	nack thought the angle of the
hPa : - Del. quantity	+ rack travel mm : 1.00 + Tolerance mm : + 0.70
cm3/1000 strokes : 122.0	Rated speed rpm : 950
Tolerance	+
cm3/1000 strokes : + 2.0	†
	+ Rated speed rpm : 750

rack travel mm	: 10.80	Rated speed rpm	: 100
Rated speed rpm Tolerance 1/min		CRT mm min.	: > 19.00
rack travel mm		Testing:	
rack travel mm	: 1.00	Rated speed rpm	: 650
Tolerance mm Rated speed rpm	: +- 0.70 : 950	rack travel mm Tolerance mm	: 6.20 : +- 0.20
Rated speed rpm rack travel mm		TORQUE CONTROL	. 700
		Rated speed rpm rack travel mm	: 11.80
Rated speed rpm		† Tolerance mm	: <b>←</b> 0.05
Tolerance 1/min rack travel mm		Ī	
rack travel mm	: 1.00	+	
Tolerance mm	: + 0.70	Į	
Rated speed rpm		+	
		+ STARTING FUEL DEL	.IVERY
Rated speed rpm		Rated speed rpm	: 100
rack travel mm	: 10.80	+ rack travel mm	
Batad aroad rom	: 782	+ Tolerance mm	: <b>←</b> 1.00
Rated speed rpm Tolerance 1/min		+ Del. quantity + cm3/1000 strokes	· 140 0
rack travel mm	4.00	+ Tolerance	. 140.0
	4.00	+ cm3/1000 strokes	: <del>+-</del> 10.0
rack travel mm Tolerance mm	: 1.00 : +- 0.70	+ Check tolerance + cm3/1000s.	: +- 13.0
Rated speed rpm	: 950	1 0003.	. , 13.0
, ,		+	
Rated speed rpm	: 753	I	
rack travel mm		LOW IDLE	
<b>5</b> .1	207	†	450
Rated speed rpm Tolerance 1/min		Rated speed rpm	: 650
rack travel mm		Rack travel in mm	: 6.20
		+ Tolerance mm	: +- 0.20
rack travel mm	: 1.00 : +- 0.70	+ Del. quantity + cm3/1000 strokes	: 19.0
Tolerance mm Rated speed rpm		+ Tolerance	: 19.0
Hacea speca i più	. , , , ,	+ cm3/1000 strokes	: +- 2.0
		+ Check tolerance	
LOW IDLE		+ cm3/1000s. + Spreed	: +- 4.5
		+ Tolerance	
control lever		+ cm3/1000 strokes	: 3.5
position degree		+ Check tolerance	
tolerance degree	: +- 4.0	cm3/1000s.	: 5.5
Setting point w/o	ut bumper spring	Ì	
Rated speed rpm	: 650	<b>+</b>	
rack travel mm	: 5.70	+	
Tolerance mm	: +- 0.20	End of test speci	fication sheet
		†	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 01.10.98 Test oil : ISO 4113

Combination No. : 0 403 476 108

Injection pump

Pump designation : PES6MW100/320RS1132

EP type number : 0 413 406 124

Governor

Governer design. : RSV325...1400MW2A314

: -3

Governer no. : 0 420 085 173

Cust. part No. :

Customer-spec. information Customer : PENTA : TD 616 : TD 610M

Motor Power KW

: 147.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: **←** 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

har

Tolerance bar

: 173.5 : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

F09

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in imm: 11.30

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 97.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. : ← 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 7.0
Check tolerance cm3/1000s. : 7.0	CONTROL LEVER
Rated speed ripm : 325	control lever position degree : 108.0
Rack travel in mm : 6.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 14.0 Tolerance	tolerance degree : + 4.0  RATED SPEED rack travel mm : 10.30 Rated speed rpm : 1280 Tolerance 1/min : + 5
cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1385 Tolerance 1/min : + 10
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	rack travel mm : 1.00 Tolerance mm : + 0.70 Rated speed rpm : 1575
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1420 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	<pre>control lever position degree : 80.0 tolerance degree : +- 4.0 Setting point w/out bumper spring</pre>
governor spring pre-tension click setting x : 6.25	Rated speed rpm : 325 rack travel mm : 5.60 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOF	Rated speed rpm : 100
Rated speed rpm : 1000 Aneroid pressure hPa : 800	CRT mm min. : > 19.00  Testing:
Del. quantity cm3/1000 strokes : 97.0 Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 325 rack travel mm : 6.10 Tolerance mm : + 0.10
CHID/ TUQUE SCHOKES : TT 1.0 +	rack travel mm : 2.00

Rated speed rpm : 620 Tolerance 1/min : + 30

TORQUE CONTROL
Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1000
Pressure hPa : 800
rack travel mm : 11.30
Tolerance mm : + 0.05

Rated speed rpm : 1000
Pressure hPa : rack travel mm : 10.00
Tolerance mm : + 0.05

## MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 420 rack travel mm : 11.10 Tolerance mm : + 0.15

Pressure hPa : 130 rack travel mm : 10.20 Tolerance mm : + 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 79.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 3.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance

7.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 13.0

### LOW IDLE

Rated speed rpm : 325 Rack travel in mm: 6.10 Tolerance mm : +-0.10Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. : <del>←</del> 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

End of test specification sheet

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.10.98 Test oil : ISO 4113

Combination No. : 0 403 476 130

Injection pump

Pump designation : PES6MW100/320RS1211 EP type number : 0 413 406 202

Governor

Governer design. : RSV300...900MW1A311

: -6

Governer no. : 0 420 085 224

Cust. part No. :

Customer—spec. information Customer : PENTA Motor : TWD 610 P

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 9.70 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 98.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

\_\_\_\_\_

Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVED
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 300	control lever position degree : 106.0 tolerance degree : +- 4.0
Rack travel in mm: 6.00 + Tolerance mm: + 0.25 + Del. quantity	RATED SPEED rack travel mm : 8.70
cm3/1000 strokes : 19.0 + Tolerance +	Rated speed rpm : 920 Tolerance 1/min : +- 3
cm3/1000 strokes : + 2.0 + Check tolerance + 4.5 + 4.5	rack travel mm : 4.00 Rated speed rpm : 945
Spreed + Tolerance +	Tolerance 1/min : + 8
cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 1.00 Tolerance mm : +- 0.70
cm3/1000s. : 5.5	Rated speed rpm : 1050
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 975 Tolerance 1/min : +- 8
GUIDE SLEEVE POSITION	LOW IDLE
control lever	
position degree : -3 Rated speed rpm : 800	control lever position degree : 82.0 tolerance degree : +- 4.0
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Setting point w/out bumper spring
governor spring pre-tension click setting x : 6.00	Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : +- 0.25
ELLI LOAD DELTWEDY AT ELLI LOAD STOR	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.00
Rated speed rpm : 900 Aneroid pressure hPa : -	Testing:
Del. quantity cm3/1000 strokes : 98.0 Tolerance	Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : +- 0.25
cm3/1000 strokes : +- 1.0	

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 9.70 Tolerance mm : + 0.05

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 13.0

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00 Tolerance mm : + 0.25

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.07.98 : ISO 4113

Combination No. : 0 402 746 639KH

Injection pump

Pump designation : PES6P120A320RS7350

: -3

EP type number : 0 412 726 975

Governor

Governer design. : RQ275/1050PA1217-2

Governer no. : 0 421 801 832

Cust. part No. : CCEP 5172 66-255

Customer-spec. information

Customer : RENAULT V.I. : MIDRO62045 J41

Motor

Power KW

: 210.

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: 40.0 : +-2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.50 Tolerance bar : +-0.1

Overflow quantity

min. l/h : 120 Tolerance l/h : +-20

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar : 208.50 Tolerance bar : +-1.5

F15

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 26.00 Tolerance bar : +-1.0

Prestroke mm : 4.80 Tolerance mm : +-0.05

Check

tolerance mm

: +-0.10

Rack travel in mm: 20.25

Tolerance mm : +-0.75

Firing order : 1- 5- 3- 6- 2

Phasing

: 0- 60-120-180-240

: -300

Tolerance

: +-0.50

Check

tolerance °NW : +-0.75

Start of delivery mark

\*NW after s.o.d. : -0.45

Tolerance

: +-0.50

Check

tolerance °NW

: +-0.75

Barrel no.

: 1

		† Tolerance mm :	+-0.15
T ZERO POSITION		Rated speed rpm : guide sleeve	275
		+ travel mm :	1.52
ck travel in mm	: 13.40	+ Tolerance mm :	+-0.20
lerance mm		+	
		Rated speed rpm :	1050
		guide sleeve	
SIC SETTING		travel mm :	6.00
		† Tolerance mm :	+-0.10
ted speed rpm	: 600	†	4-5
		Rated speed rpm :	400
erande mm	: +-0.05	† guide sleeve	
		+ travel mm :	4.82
quantity	205 00	† Tolerance mm :	+-0.10
/1000 strokes	: 285.00	†	400
		Rated speed rpm :	480
erance		+ guide sleeve	
1/1000 strokes	: +-1.00	+ travel mm :	6.00
1 4 : 1		† Tolerance mm :	+-0.10
ck tolerance		†	4300
/1000s.	: +-4.00		1330
		+ guide sleeve	4
reed		+ travel mm :	11.50
		+ Tolerance mm :	+-0.50
erance	<b></b>	+	
1000 strokes	: 5.00	+	
		+ GUIDE SLEEVE POSITIO	N
k tolerance		+	
1000s.	9.00	†	
		+ control lever	<b>.</b>
		+ position degree :	109.0
		+ Rated speed rpm :	600
ed speed rpm :	275	+	
	A ==	+ Rack travel in mm :	
travel in mm :		+ Tolerance mm :	+-0.80
erance mm :	+-0.10	+	
. quantity		+	
/1000 strokes :	27.00	+ FULL LOAD DELIVERY A	T FULL LOAD
erance		+	
/1000 strokes :	+-2.00	+ Rated speed rpm :	600
ck tolerance		+ Aneroid pressure	
	<b>←</b> 5.00	+ hPa :	1000
ed		+ Del. quantity	
rance		+ cm3/1000 strokes :	285.00
1000 strokes :	8.00	+ Tolerance	
k tolerance		+ cm3/1000 strokes :	+-1.00
1000s. :	12.00	+ Check tolerance	- <del>-</del>
		+ cm3/1000s. :	+-4.00
		Spreed	
SETTING OF INJE	CTION PUMP	Tolerance	
	= · · · · · ·	+ cm3/1000 strokes :	5.00
GOVERNOR		+ Check tolerance	2.00
GOVERNOR			
I GOVERNOR		+ cw4/JINNIC .	9 111
		+ cm3/1000s. :	9.00
I GOVERNOR  DE SLEEVE TRAVEL		+ cm3/1000s. :	9.00
SLEEVE TRAVEL			9.00
	4400	cm3/70UUS. :	9.00

control lever position degree : 33.0 control lever position degree : 275.0 tolerance degree : +-4.0 RATED SPEED rack travel mm -1.00Rated speed rpm : 1115 4.00 rack travel mm : Rated speed rpm : 1228 rack travel mm : -12.90Tolerance mm +-0.50 1350 Rated speed rpm : LOW IDLE control lever position degree : 254.0 tolerance degree : +-4.0 control lever position degree : 13.0 Setting point w/out bumper spring 950 Rated speed rpm : CRT mm min. : >8.78 Testing: Rated speed rpm : 275 rack travel mm : -6.90Tolerance mm +-0.10 2.00 rack travel mm : Rated speed rpm : 387 Tolerance 1/min : +-20 TORQUE CONTROL 600 Rated speed rpm : Tolerance mm +-0.05 1050 Rated speed rpm : Tolerance mm +-0.10

ANEROID/ALTITUDE COMPENSATOR TEST			
SETTING			
Rated speed rpm Pressure hPa	:	500 1000	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	:	500 - -2.85 +-0.20	
MEASUREMENT			
Rated speed rpm	:	500	
Pressure hPa rack travel mm Tolerance mm	•	520 -0.60 +-0.15	
Pressure hPa rack travel mm Tolerance mm	•	240 -2.20 +-0.05	
Start interlock			
Check speed 1/min Check	:	>100	
speed 1/min	:	<195	
FUEL DELIVERY CHA	IRA(	TERISTICS	
Aneroid pressure		_	
Rated speed rpm Del. quantity	:	500	
cm3/1000 strokes Tolerance	:	150.00	
cm3/1000 strokes Check tolerance	:	+-1.00	
cm3/1000s.	:	+-4.00	
STARTING FUEL DEL	IVE	RY	
Rated speed rpm Del. quantity	:	100	
cm3/1000 strokes Tolerance	:	145.00	

Check tolerance

cm3/1000s: +-19.00

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -6.90 Tolerance mm : +0.10

Del. quantity

cm3/1000 strokes : 27.00

Tolerance

cm3/1000 strokes : +-2.00

Check tolerance

cm3/1000s :  $\leftarrow 5.00$ 

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.00

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.10.98 Test oil : ISO 4113

Combination No. : 0 400 464 124

Injection pump

Pump designation : PES4A80D410/3RS1300

EP type number : 0 410 484 015

Governor

Governer design. : RSV325...1150A8C298L

Governer no. : 0 420 232 308

Cust. part No. :

Customer-spec. information

Customer : KHD

Motor

: F4L912

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C

Tolerance °C

: <del>+-</del> 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 bar

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 1.95 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasina

: 0<del>-9</del>0-180-270 : +- 0.50

Tolerance Check

tolerance °NW

: <del>←</del> 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 50.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : +- 2.0

Tolerance

Spreed

cm3/1000 strokes : 2.5

Check tolerance cm3/1000s. : 4.0	
UIIS/ (8003. : 4.0 -	CONTROL LEVER
I	control lever
Rated speed rpm : 325	position degree : 108.0
	tolerance degree : +- 4.0
Rack travel in mm: 8.80	1.0
Tolerance mm : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 9.50
cm3/1000 strokes : 13.0	Rated speed rpm : 1195
Tolerance +	Tolerance 1/min : + 5
cm $3/1000$ strokes : $\leftarrow$ 1.5	
Check tolerance +	rack travel mm : 4.00
cm3/1000s. : + 3.5	Rated speed rpm : 1245
Spreed	Tolerance 1/min : + 15
Tolerance +	
cm3/1000 strokes : 4.0	rack travel mm : 0.85
Check tolerance + cm3/1000S. : 6.0 +	Tolerance mm : + 0.55
CIID/ 10003. : 6.0	Rated speed rpm : 1420
Ĭ	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1270
WITH GOVERNOR	Tolerance 1/min : +- 15
	To cot an oc transition (2
+	
+	
GUIDE SLEEVE POSITION +	
+	LOW IDLE
+	
control lever	
position degree : -3	control lever
Rated speed rpm : 800	position degree : 73.0
Rack travel in mm: 0.50	tolerance degree : + 4.0
Tolerance mm : + 0.20	Setting point w/out bumper spring
Total and the limit	secting point wroat bumper spring
governor spring	Rated speed rpm : 325
pre-tension +	rack travel mm : 8.30
click setting x : 5.50	Tolerance mm : + 0.10
1	
	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	Rated speed rpm : 325
Rated speed rpm : 1150	rack travel mm : 8.80
Aneroid pressure +	Tolerance mm : +- 0.10
hPa : -	
Del. quantity	rack travel mm : 2.00
cm3/1000 strokes : 50.5	Tolerance 1/min : +- 30
cm3/1000 strokes : +- 0.5	
Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 2.0	Rated speed rpm : 1150
Spreed	rack travel mm : 10.50
Tolerance	Tolerance mm : + 0.05
cm3/1000 strokes : 2.5	
Check tolerance	Rated speed rpm : 500
cm3/1000s. : 4.0	rack travel mm : 11.25
T	Tolerance mm : +- 0.05
Ţ	

Rated speed rpm : 880 rack travel mm : 10.90 Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90 Tolerance mm : + 0.10

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes : 120.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. :  $\leftarrow$  3.5

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 6.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 400 846 596

Injection pump

Pump designation : PES6A95D32ORS2693Z EP type number : 0 410 896 913

Governor

Governer design. : RQ300/1300AB1253-1R

Governer no. : 0 420 201 650

Cust. part No. :

Customer-spec. information Customer : DAF

Motor

: NS 156

## TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C 40 Tolerance °C : <del>←</del> 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 2.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 9.00 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1290

Rack travel in mm : 11.75 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.5

		t	
Rated speed rpm :	300	<u> </u>	
Rack travel in mm : Tolerance mm :		LOW IDLE	
Del. quantity cm3/1000 strokes :		Setting point w/o	ut bumper spring
Tolerance cm3/1000 strokes :		Rated speed rpm	: 100
Check tolerance	+ 4.5	CRT mm min.	: > 7.50
Spreed Tolerance	4.5	Testing:	
cm3/1000 strokes : Check tolerance	3.5	Rated speed rpm rack travel mm	: 300 : 6.40
cm3/1000s. :	5.5	Tolerance mm	: + 0.10
(B) SETTING OF INJECT WITH GOVERNOR	TION PUMP	rack travel mm Rated speed rpm Tolerance 1/min	: 545
GUIDE SLEEVE POSITION	N	TORQUE CONTROL	
control lever	N	Dimension a mm Rated speed rpm rack travel mm	: 1290
position degree : Rated speed rpm :	87 725	+ Tolerance mm	
Rack travel in mm : Tolerance mm : -		Rated speed rpm rack travel mm Tolerance mm	: 850 : 11.95 : +- 0.05
FULL LOAD DELIVERY AT	T FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm : Aneroid pressure hPa : Del. quantity	700	Rated speed rpm rack travel mm Tolerance mm	: 925 : 12.80
cm3/1000 strokes : Tolerance cm3/1000 strokes : 4 Check tolerance cm3/1000s. : 4	<b>⊢</b> 1.0	Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.40 : ← 0.20
RATED SPEED rack travel mm : Rated speed rpm :	10.70	ANEROID/ALTITUDE COMPENSATOR TEST	
Rated speed rpm : Tolerance 1/min : H	1343 ⊢ 8	SETTING	
Rated speed rpm :	4.00 1425 — 15	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700
rack travel mm : Tolerance mm : + Rated speed rpm :	- 0.50	Rated speed rpm Pressure hPa	: 600

rack travel mm Tolerance mm	: : +	10.35 - 0.05
MEASUREMENT		
Rated speed rpm	:	600

Pressure hPa : 250 rack travel mm : 10.80 Tolerance mm : + 0.10

Pressure hPa : 290 rack travel mm : 11.55 Tolerance mm : + 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure 700 hPa Rated speed rpm 850 Del. quantity cm3/1000 strokes : 86.0 Tolerance cm3/1000 strokes :  $\leftarrow$  0.5 Check tolerance : +cm3/1000s. 2.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 6.0

Aneroid pressure
hPa : Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000s. : + 2.5

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : + 0.10
Del. quantity

cm3/1000 strokes : 8.0

Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000S.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000S.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 14.10.98 Test oil : ISO 4113

Combination No. : 0 400 866 149

Injection pump

Pump designation : PES6A100b320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV375...1000A0C2190

: -44R

Governer no. : 0 420 233 250

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor : 6 CT 8.3 Power KW : 145.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 28.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50

Firing order : 1-5-3-6-2-

. 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ← 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 133.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : + 3.5

F25

	+
Spreed	
Tolerance cm3/1000 strokes : 4.0	CONTROL LEVER
	+ control lever
Check tolerance	position degree : 81.0
cm3/1000s. : 6.5	tolerance degree : + 4.0
	RATED SPEED
	+ rack travel mm : 11.95
Rated speed rpm : 375	+ Rated speed rpm : 1055 + Tolerance 1/min : +- 5
Rack travel in mm: 5.40	+
Tolerance mm : + 0.10	rack travel mm : 4.00
Del. quantity	+ Rated speed rpm : 1130
cm3/1000 strokes : 16.0	+ Tolerance 1/min : + 15
Tolerance	+
cm3/1000 strokes : +- 2.0	+ rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55
cm3/1000s. : +- 4.5	Rated speed rpm : 1200
Spreed	+
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : 6.0	+ Rated speed rpm : 1135
Check tolerance	+ Tolerance 1/min : + 15
cm3/1000s. : 8.0	+
	+
WITH GOVERNOR	LOW IDLE
	LOW IDLE Setting point w/out bumper spring
	Setting point w/out bumper spring Rated speed rpm : 375
	Setting point w/out bumper spring Rated speed rpm : 375 rack travel mm : 4.90
GUIDE SLEEVE POSITION	Setting point w/out bumper spring Rated speed rpm : 375
GUIDE SLEEVE POSITION	Setting point w/out bumper spring  Rated speed rpm : 375  rack travel mm : 4.90  Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  control lever position degree : - 3	Setting point w/out bumper spring Rated speed rpm : 375 rack travel mm : 4.90
GUIDE SLEEVE POSITION  control lever  cosition degree : - 3	Setting point w/out bumper spring  Rated speed rpm : 375  rack travel mm : 4.90  Tolerance mm : + 0.10  Rated speed rpm : 100
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800	Setting point w/out bumper spring  Rated speed rpm : 375  rack travel mm : 4.90  Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  control lever position degree : - 3   Rated speed rpm : 800   Rack travel in mm : 0.50	Setting point w/out bumper spring  Rated speed rpm : 375  rack travel mm : 4.90  Tolerance mm : + 0.10  Rated speed rpm : 100
GUIDE SLEEVE POSITION  control lever position degree : - 3   Rated speed rpm : 800   Rack travel in mm : 0.50	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Folerance mm : +- 0.20	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : -	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity cm3/1000 strokes : 133.5	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity cm3/1000 strokes : 133.5  Tolerance cm3/1000 strokes : + 1.0	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - pel. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.95
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure nPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.95 Tolerance mm : + 0.05
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.95 Tolerance mm : + 0.05  Rated speed rpm : 750
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance	Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.95 Tolerance mm : + 0.05  Rated speed rpm : 750
GUIDE SLEEVE POSITION  control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 133.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0	Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 4.90 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 5.40 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 450 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 12.95 Tolerance mm : + 0.05

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 13.0

## LOW IDLE

Rated speed rpm : 375 Rack travel in mm : 5.40 Tolerance mm : ← 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s.Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.10.98 : ISO 4113

Combination No. : 0 400 866 194

Injection bumb

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV415...1175A0C2190

: <del>-6</del>9R

Governer no. : 0 420 233 308

Cust. part No. : 3921135

Customer-spec. information

Customer : CDC

Motor

: 6 CT 8.3

Power KW : 129.0

# TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 28.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm: 10.45 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 99.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.

: +- 3.5

Spreed

Tolerance	1
cm3/1000 strokes : 4.0	
Check tolerance	CONTROL LEVER
cm3/1000s. : 6.5	+ control lever
	position degree : 90.0
	tolerance degree : +- 4.0
Rated speed rpm : 415	RATED SPEED
racea speed i piii . Tris	+ rack travel mm : 9.45
Rack travel in mm : 5.20	Rated speed rpm : 1245
Tolerance mm: : + 0.10	+ Tolerance 1/min : +- 5
Del. quantity	+
cm3/1000 strokes : 16.5	+ rack travel mm : 4.00
Tolerance	+ Rated speed rpm : 1310
cm3/1000 strokes : +- 2.0	† Tolerance 1/min : +- 15
Check tolerance	most amount and 0.05
cm3/1000s. : +- 4.5 Spreed	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
Tolerance	Rated speed rpm : 1350
cm3/1000 strokes : 6.0	nated speed Ipin . 1550
Check tolerance	<pre></pre>
cm3/1000s. : 8.0	Rated speed rpm : 1315
	+ Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
<del></del>	
51175 AL FELIE BOOTTIAL!	T
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	+
GUIDE SLEEVE POSITION control lever	+
control lever position degree : - 3	Rated speed rpm : 415
control lever	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : +- 0.10
control lever position degree : - 3 Rated speed rpm : 800	Rated speed rpm : 415 rack travel mm : 4.70
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : - 3 Rated speed rpm : 800	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : +- 0.10
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10 Rated speed rpm : 100
control lever position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD Rated speed rpm : 1175	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD Rated speed rpm : 1175 Ancroid pressure	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD Rated speed rpm : 1175 Ancroid pressure hPa : -	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 175
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 175 rack travel mm : 10.45
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 175
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 175 rack travel mm : 10.45 Tolerance mm : + 0.05
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1775 rack travel mm : 10.45 Tolerance mm : + 0.05  Rated speed rpm : 800
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  FULL LOAD DELIVERY AT FULL LOAD  Rated speed rpm : 1175 Ancroid pressure hPa : - Del. quantity cm3/1000 strokes : 99.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance	Rated speed rpm : 415 rack travel mm : 4.70 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  STOP  Rated speed rpm : 415 rack travel mm : 5.20 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 490 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 175 rack travel mm : 10.45 Tolerance mm : + 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa :

Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 103.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75

Tolerance mm : Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. :  $\leftarrow$  13.0

#### LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.20 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 16.5

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.02.98 Test oil : ISO 4113

Combination No. : F 002 A0Z 092

Injection pump

Pump designation : PES6A95D320/3RS2928

EP type number : F 002 A10 019

Governor

Governer design. : RSV450...750A4C965R

Governer no. : F 002 A20 251

Cust. part No. : 393 3100

Customer-spec. information

Customer : CUMMINS

Motor

: 6BT - 590

Power KW

: 89.4

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

har

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 7.00 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm: 11.75

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 110.0

G03

Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: + 3.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 6.5
Rated speed rpm	: 450
Rack travel in mm	: 7.50
Tolerance mm Del. quantity	: <b>←</b> 0.10
cm3/1000 strokes	: 14.5
Tolerance	
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s.	: <b>←</b> 4.5
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance	: 6.0
cm3/1000s.	: 8.0
(B) SETTING OF INJ WITH GOVERNOR  GUIDE SLEEVE POSIT	
control lever	
Rated speed rpm	: 800
Rack travel in mm Tolerance mm	: 0.50 : + 0.20
governor spring pre-tension click setting x	: 4.75
FULL LOAD DELIVERY	AT FULL LOAD STOP
Rated speed rpm	: 750
Aneroid pressure	
hPa	: -
Del. quantity cm3/1000 strokes	: 110.0
	· · - · <del>-</del>

Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: +- 1.0 : +- 3.0 : 4.0 : 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 96.0 : + 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 10.70 : 800 : + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 855 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 950
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 865 : + 15
IOW TOLE	

# LOW IDLE

position degree :	81.0
tolerance degree : +-	- 4.0
Control lever differer Grad : tolerance degree : +-	15.0

# Setting point w/out bumper spring

Rated speed rpm	:	450
rack travel mm	:	7.00
Tolerance mm	: +	- 0.10
Rated speed rpm	:	100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450 rack travel mm : 7.50 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 750 rack travel mm : 11.75 Tolerance mm : + 0.05

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 118.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 15.0

# LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 7.50
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 14.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. : 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.02.98 Test oil : ISO 4113

Combination No. : F 002 A0Z 093

Injection pump

Pump designation : PES6A95D32D/3RS2928 EP type number : F 002 A10 019

Governor

Governer design. : RSV450...750A7C966R

Governer no. : F 002 A20 250

Cust. part No. : 3933102

Customer-spec. information Customer : CUMMINS : 6BTA-590 Motor Power KW : 116.2

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.65
Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 131.0

Tolerance +	Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0
1	Check tolerance
Check tolerance	cm3/1000s. : +- 3.0
cm3/1000s. : +- 3.0	Spreed
T 3.0	Tolerance
Consol	
Spreed	cm3/1000 strokes : 4.0
	Check tolerance
Tolerance	cm3/1000s. : 6.5
cm3/1000 strokes : 4.0 +	
Check tolerance +	
cm $3/1000$ s. : 6.5 $+$	CONTROL LEVER
+	
	control lever
	position degree : 97.0
Rated speed rpm : 450	tolerance degree : +- 4.0
Tated speed (pii) : 450	toter drice degree 4.0
Rack travel in mm: 7.30	RATED SPEED
Tolerance mm : +- 0.10	
	rack travel mm : 12.30
Del. quantity +	Rated speed rpm : 795
cm3/1000 strokes : 8.5	Tolerance 1/min : +- 5
Tolerance +	
cm3/1000 strokes : $+$ 2.0 $+$	rack travel mm : 4.00
Check tolerance +	Rated speed rpm : 835
cm3/1000s. : $+$ 4.5	Tolerance 1/min : +- 5
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 6.0	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 950
cm3/1000s. : 8.0	Rated Speed (pill . 900
Cm5/1000s. : 0.0	
†	rack travel mm : 4.00
+	Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP +	Tolerance 1/min : +- 15
WITH GOVERNOR +	
+	
+	
+	
GUIDE SLEEVE POSITION +	LOW IDLE
1	
control lever	control lever
position degree : FREE	position degree : 78.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rated Speed (piii . 000 T	
1	toterance degree . The 4.0
Pack though in me is 0.50	•
Rack travel in mm : 0.50	Control lever difference
Rack travel in mm : 0.50 + Tolerance mm ; + 0.20 +	Control lever difference Grad : 19.0
Tolerance mm ; → 0.20	Control lever difference
	Control lever difference Grad : 19.0
Tolerance mm ; → 0.20	Control lever difference Grad : 19.0
Tolerance mm ; + 0.20 + governor spring pre-tension +	Control lever difference Grad : 19.0 tolerance degree : + 6.0
Tolerance mm ; + 0.20 + governor spring pre-tension +	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring
Tolerance mm ; + 0.20 + governor spring pre-tension +	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450
Tolerance mm ; ← 0.20  governor spring pre-tension click setting x : 4.25	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80
Tolerance mm ; + 0.20 + governor spring pre-tension +	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450
Tolerance mm ; ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80 Tolerance mm : + 0.10
Tolerance mm : ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP  Rated speed rpm : 756	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80
Tolerance mm : ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP  Rated speed rpm : 75G Aneroid pressure	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80 Tolerance mm : + 0.10  Rated speed rpm : 100
Tolerance mm ; ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP  Rated speed rpm : 75G Aneroid pressure hPa : -	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80 Tolerance mm : + 0.10
Tolerance mm ; ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP  Rated speed rpm : 75G Aneroid pressure hPa : - Del. quantity	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00
Tolerance mm ; ← 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STCP  Rated speed rpm : 75G Aneroid pressure hPa : -	Control lever difference Grad : 19.0 tolerance degree : + 6.0  Setting point w/out bumper spring  Rated speed rpm : 450 rack travel mm : 6.80 Tolerance mm : + 0.10  Rated speed rpm : 100

Rated speed rpm : 450 rack travel mm : 7.30 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 750 rack travel mm : 13.35 Tolerance mm : + 0.05

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 117.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 15.0

#### LOW IDLE

Rated speed rpm : 450 Rack travel in mm: 7.30 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 8.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.12.97 Test oil : ISO 4113

Combination No. : 0 402 066 714

Injection pump

Pump designation : PES6P110A120RS3336

: -1

EP type number : 0 412 016 751

Governor

Governer design. : RSV440...900P2A687

Governer no. : 0 421 833 609

Cust. part No. : 3933640

Customer—spec. information Customer : CDC Motor : 6CTA Power KW : 194.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 8.00Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 1

#### Beginning of delivery differende

and maximum rack

travel : 15.00 Difference ° CS : 1.50

	+
BASIC SETTING	governor spring pre-tension
BASIC SELLING	- click setting x : 3.00
Rated speed rpm : 900	
Rack travel in mm : 14.75	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 900
Del. quantity	+ Aneroid pressure + hPa : 1500
cm3/1000 strokes : 201.0	Del. quantity cm3/1000 strokes : 201.0
Tolerance	Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : + 1.0
Check tolerance	+ Check tolerance + cm3/1000S. : + 3.0
cm $3/1000$ s. : $+$ 3.0	Spreed
Spreed	† Tolerance ÷ cm3/1000 strokes : 8.0
•	Check tolerance
Tolerance - cm3/1000 strokes : 8.0 -	+ cm3/1000s. : 12.0
	+
Check tolerance - cm3/1000s. : 12.0 -	CONTROL LEVER
***************************************	t control lever
-	position degree : 87.0
Rated speed rpm : 440 -	tolerance degree : +- 6.0
Rack travel in mm : 5.30	RATED SPEED
Tolerance mm : + 0.10 - Del. quantity -	rack travel mm : 13.75 Rated speed rpm : 1010
cm3/1000 strokes : 26.5	Tolerance 1/min : + 5
Tolerance - cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1075
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 5
Spreed - Tolerance -	rack travel mm : 0.85
cm3/1000 strokes : 4.0	Tolerance mm : + 0.55
Check tolerance - cm3/1000s. : 6.5	Rated speed rpm : 1200
4	- rack travel mm : 4.00 - Rated speed rpm : 1090
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- Rated speed rpm : 1090 - Tolerance 1/min : +- 15
]	-
GUIDE SLEEVE POSITION	LOW IDLE
control lever	- - control lever
position degree : - 3	- position degree : 66.0
Rated speed rpm : 800	tolerance degree : +- 6.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	- Control lever difference - Grad : 21.0

tolerance degree : +- 6.0

Setting point w/out bumper spring

Rated speed rpm : 440 rack travel mm : 4.80

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 440 rack travel mm : 5.30 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 14.75 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900 Pressure hPa : 1500

Rated speed rpm : 900
Pressure hPa : rack travel mm : 11.10
Tolerance mm : + 0.20

**MEASUREMENT** 

Rated speed rpm : 900

Pressure hPa : 995 rack travel mm : 13.45 Tolerance mm : +- 0.20

Pressure hPa : 650 rack travel mm : 12.05 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 900 Del. quantity

cm3/1000 strokes : 123.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm :  $\leftarrow 0.50$ 

Del. quantity

cm3/1000 strokes : 154.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 440

Rack travel in mm : 5.30 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 26.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000S. : ← 4.5

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 6.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.08.98 : ISO 4113

Combination No. : 0 402 066 715

Injection pump

Pump designation : PES6P110A120RS3397

EP type number : 0 412 016 758

Governor

Governer design. : RSV500...1000P2A689

Governer no. : 0 421 833 611

Cust. part No. : 3930529

Customer-spec. information Customer : CDC Motor : 6CT : 166.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

x inside diameter: 3.0 x length mm : 600

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: **←** 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.25

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference ° CS : 1.50

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	†
BASIC SETTING	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1000	+ Rated speed rpm : 1000 - Aneroid pressure
Rack travel in mm : 12.50	hPa : 1300 Del. quantity
Tolerance mm : + 0.05	- cm3/1000 strokes : 172.5 - Tolerance
Del. quantity cm3/1000 strokes : 172.5	- cm3/1000 strokes : +- 1.0 - Check tolerance - cm3/1000s. : +- 3.0
Tolerance cm3/1000 strokes : + 1.0	- Spreed - Tolerance
Check tolerance cm3/1000s. : +- 3.0	+ cm3/1000 strokes : 8.0 + Check tolerance + cm3/1000s. : 12.0
Spreed	
Tolerance cm3/1000 strokes : 8.0	CONTROL LEVER
	+ control lever
Check tolerance	position degree : 96.0
cm3/1000s. : 12.0	tolerance degree : + 4.0
	+ RATED SPEED
Rated speed rpm : 500	+ rack travel mm : 11.50 + Rated speed rpm : 1075
nated speed (pill : 500	Tolerance 1/min : +- 5
Rack travel in mm : 4.90	Check
Tolerance mm : + 0.10	+ speed 1/min : + 10
Del. quantity cm3/1000 strokes : 27.5	+ rack travel mm : 4.00
Tolerance	Rated speed rpm : 1155
cm3/1000 strokes : + 2.0	+ Tolerance 1/min : +- 5
Check tolerance	+ Check
cm3/1000s. : +- 4.5 Spreed	speed 1/min : +- 10
Tolerance cm3/1000 strokes : 4.0	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
Check tolerance	+ Rated speed rpm : 1275
cm3/1000s. : 6.5	+
	rack travel mm : 4.00
(D) DETERMO OF THE COTTON DIME	Rated speed rpm : 1155
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Tolerance 1/min : + 15 + Check
WITH GOVERNOR	speed 1/min : +- 20
GUIDE SLEEVE POSITION	
	LOW IDLE
control lever	†
position degree : - 3	control lover
Rated speed rpm : 800	control lever position degree : 76.0
Rack travel in mm: 0.50 Tolerance mm: +- 0.20	tolerance degree : +- 4.0
TO COT OFFICE HIM O. LO	· ·

Control lever di	ffaranca
Grad tolerance degree	: 20.0
Setting point w/o	out bumper spring
Rated speed rpm rack travel mm	
Rated speed rpm	: 100
CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 4.90 : +- 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.50 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.75 : + 0.20
Rated speed rpm rack travel mm Tolerance mm	: 900 : 13.20 : ← 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1300
Rated speed rpm Pressure hPa rack travel mm Folerance mm	: 500 : - : 12.00 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 950 : 12.70 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 850 : 12.30 : +- 0.20
24/	

ARACTERISTICS
: 1300 : 700
: 205.5
: +- 2.0
: +- 5.0
: 13.20 : + 0.20
: -
: 500
: 165.0
: ← 1.0
: +- 3.0
IVERY
: 100 : 21.00 : + 0.50
: 21.00 : + 0.50
: 21.00 : + 0.50 : 157.0
: 21.00 : + 0.50 : 157.0 : + 20.0
: 21.00 : + 0.50 : 157.0 : + 20.0
: 21.00 : + 0.50 : 157.0 : + 20.0 : + 25.0
: 21.00 : + 0.50 : 157.0 : + 20.0 : + 25.0 : 500 : 4.90
: 21.00 : + 0.50 : 157.0 : + 20.0 : + 25.0 : 500 : 4.90 : + 0.10

Tolerance

cm3/1000 strokes : 4.0

Check tolerance cm3/1000s. : 6.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 0 402 076 779

Injection bump

Pump designation : PES6P120A720Rs3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...900P4A611

Governer no. : 0 421 833 489

Cust. part No. : RE63767

Customer-spec. information Customer : DEERE Motor

: 6081AF001 : 150.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : ← 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

°NW after s.o.d. : 7.00 Tolerance : ← 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00 Difference ° CS : 2.50

## BASIC SETTING

Rack travel in mm: 13.90	
Rack travel in mm: 13.90 + Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 219.5	Rated speed rpm : 800 Aneroid pressure
Tolerance	hPa : - Del. quantity
cm3/10G0 strokes : + 1.0	cm3/1000 strokes : 219.5 Tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : +- 3.0 Spreed
Tolerance	Tolerance cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CIID/10003
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 400	control lever
†	position degree : 100.0
Rack travel in mm : 5.15 + Tolerance mm : + 0.10 +	tolerance degree : +- 4.0
Del. quantity +	RATED SPEED
cm3/1000 strokes : 25.5	rack travel mm : 12.90
Tolerance + 3.0 +	Rated speed rpm : 910 Tolerance 1/min : + 5
Check tolerance	roterance min . +- 3
cm3/1000s. : + 5.0	rack travel mm : 4.00
Spreed	Rated speed rpm : 950
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : 6.0 + Check tolerance	rack travel mm : 0.85
cm3/1000s. : 8.0	Tolerance mm : + 0.55
	Rated speed rpm : 1020
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR	Rated speed rpm : 970
+	Tolerance 1/min : + 15
†	
GUIDE SLEEVE POSITION	
1	LOW IDLE
control lever	LOW IDLE
position degree : -3	
Rated speed rpm : 800	control lever
1	position degree : 77.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	tolerance degree : +- 4.0
+	Setting point w/out bumper spring
governor spring	Datad anad six 400
pre-tension + click setting x : 4.75 +	Rated speed rpm : 400 rack travel mm : 4.65
click setting $x$ : 4.75	rack travel mm : 4.65 Tolerance mm : +- 0.10
Ī	roter dince min . TO U. (U

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400 rack travel mm : 5.15 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 800 rack travel mm : 13.90 Tolerance mm : ← 0.05

Start interlock

Rated speed rpm : > 100

Check

speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 25.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.15 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 25.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

End of test specification sheet

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#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.05.98 Test oil : ISO 4113

Combination No. : 0 402 076 791

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -6

Governer no. : 0 421 833 526

Cust. part No. : RE66241

Customer-spec. information Customer : DEERE Motor : 6081TF001 Power KW : 149.0

#### TEST BENCH REQUIREMENTS

Inlet line

: 4.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter :

3.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 6.50

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

: 14.00 travel

Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100 -	
Rack travel in mm : 11.55 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 133.0	Aneroid pressure hPa : 900 Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	- cm3/1000 strokes : 133.0 - Tolerance - cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 3.0	- Check tolerance - cm3/1000s. : +- 3.0 - Spreed
Spreed	- Tolerance - cm3/1000 strokes : 4.0 - Check tolerance
Tolerance cm3/1000 strokes : 4.0	- cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 97.0 tolerance degree : +- 6.0
Rack travel in mm : 5.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 26.0	- RATED SPEED - rack travel mm : 10.50 - Rated speed rpm : 1160 - Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed	- rack travel mm : 4.00 - Rated speed rpm : 1215 - Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : +- 15 .
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 6.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 400 rack travel mm : 5.20 Tolerance mm : +- 0.10

## Testing:

Rated speed rpm : 400 rack travel mm : 5.70 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 11.55
Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 11.90 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500 Pressure hPa 900

Rated speed rpm : 500 Pressure hPa rack travel mm 9.20 : +- 0.20 Tolerance mm

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 550 rack travel mm : 11.00 Tolerance mm : +- 0.20

Pressure hPa : 210 rack travel mm : 9.80 Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100

Check

speed 1/min : > 80

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 900 Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 148.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Aneroid pressure

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

: +cm3/1000s. 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 21.00 : +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 25.0

#### LOW IDLE

Rated speed rpm : 400

5.70 Rack travel in mm : Tolerance mm :  $\leftarrow$  0.10 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance

Spreed

cm3/1000s.

Tolerance

cm3/1000 strokes : 6.0 Check tolerance

cm3/1000s.

8.0

: <del>←</del> 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.03.96 Test oil : ISO 4113

Combination No. : 0 402 076 793

Injection pump

Pump designation : PESSP120A720RS3367 EP type number : 0 412 026 788

Governor

Governer design. : RSV400...1100P2A599

: -8

Governer no. : 0 421 833 528

Cust. part No. : RE66243

Customer-spec. information Customer : DEERE Motor : 6081AF001

: 168.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 : **←** 2.0 Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 : <del>+-</del> 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

Start of delivery mark

°NW after s.o.d. : 6.75 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel 14.00 Difference ° CS : 2.50

## BASIC SETTING

+	
Rack travel in mm : 12.10 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 151.0	Aneroid pressure hPa : 1200
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 151.0 Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : + 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000S. : 6.5	
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 95.0 tolerance degree : + 4.0
Rack travel in mm: 5.60  Tolerance mm: + 0.10  Del. quantity	RATED SPEED : 11.10
cm3/1000 strokes : 30.5 Tolerance + cm3/1000 strokes : + 2.0	Rated speed rpm : 1160 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 4.00 Rated speed rpm : 1210 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 6.0 check tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000s. : 8.0	Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1210 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 69.0 tolerance degree : + 4.0
Rack travel in mm : 0.50 + Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 3.00	Rated speed rpm : 400 rack travel mm : 5.10 Tolerance mm : +- 0.10
·	

Rated speed rpm : 100 CRT mm min. : > 19.00 Testing: Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 12.10 Tolerance mm : + 0.05 Rated speed rpm : 700 rack travel mm : 13.00 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1200 Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.50 : +- 0.10 Tolerance mm MEASUREMENT Rated speed rpm : 500 Pressure hPa : 7.60 rack travel mm : 12.00 Tolerance mm : ← 0.20 Pressure hPa : 350 rack travel mm : 10.30 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure : 1200 hPa Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 172.0

Check tolerance cm3/1000s. : +- 4.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY rack travel mm : 100
Tolerance mm : + 0.50
Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : +- 25.0 LOW IDLE Rated speed rpm : 400 Rack travel in mm: 5.60 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 30.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0

End of test specification sheet

Tolerance

cm3/1000 strokes : +- 2.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.05.98 Test oil : ISO 4113

Combination No. : 0 402 076 817

Injection pump

Pump designation : PES6P120A720RS3367

EP type number : 0 412 026 788

Governor

Governer design. : RSV525...1000P2A640

: -1

Governer no. : 0 421 833 604

Cust. part No. : RE71286

Customer-spec. information Customer : DEERE

Motor

: 6081HT001

Power KW

: 186.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

x length mm : 600

Outside diameter : 6.0

x inside diameter :

3.0

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 10.50

: + 1.50

Tolerance mm

Firing order : 1-5-3-6-2-: 4

Phasing

: 0-60-120-180-240

Start of delivery mark

\*NW after s.o.d. : 7.50

Tolerance

: +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

: 14.00

Difference ° CS : 2.50

BASIC SETTING

<del></del>	
Rack travel in mm : 13.00 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 176.0	Aneroid pressure hPa : 1400
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 176.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000S. : + 3.0	Check tolerance cm3/1000s. : + 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
•	control lever
Rated speed rpm : 525	position degree : 87.5 tolerance degree : + 4.0
Rack travel in mm: 5.10  Tolerance mm: 4- 0.10  Del. quantity	RATED SPEED rack travel mm : 12.00
cm3/1000 strokes : 26.5  Tolerance	Rated speed rpm : 1065 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : + 4.5	rack travel mm : 4.00 Rated speed rpm : 1115 Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : 6.0 + cm3/1000s. : 8.0 + cm3/1000s.	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00 Rated speed rpm : 1120
WITH GOVERNOR +	Tolerance 1/min : ← 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 70.0 tolerance degree : +- 4.0
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 2.50	Rated speed rpm : 525 rack travel mm : 4.30 Tolerance mm : + 0.10

Rated speed rpm : 100 CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525 rack travel mm : 5.10 Tolerance mm : +- 0.10

TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 13.00 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 13.80 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1400

Rated speed rpm : 500 Pressure hPa rack travel mm : 12.25 Tolerance mm : **←** 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 975 rack travel mm : 13.40 Tolerance mm : +- 0.20

Pressure hPa : 830 rack travel mm : 12.70 Tolerance mm :  $\leftarrow$  0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1400 Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 197.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance : +- 4.0

Aneroid pressure

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 165.0

Tolerance cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : rack travel mm : 20.50 Tolerance mm :  $\leftarrow$  0.50 Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 25.0

LOW IDLE

Rated speed rpm : 525

Rack travel in mm : 5.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 26.5

Tolerance cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : <del>+-</del> 4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.06.97 Edition tartion : 09.06.97
Test oil : ISO 4113

Combination No. : 0 402 076 819

Injection pump

Pump designation : PES6P120A720RS3352 EP type number : 0 412 026 780

Governor

Governer design. : RSV425...1100P2A599

: -9

Governer no. : 0 421 833 606

Cust. part No. : RE500742

Customer-spec. information Customer : DEERE : 6081AF001 Motor : 187.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

°NW after s.o.d. : 8.00 Tolerance : + 0.50

Check

tolerance °NW : +~ 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 14.00 Difference ° CS : 2.50

#### BASIC SETTING

Book through in my 12.75	†
Rack travel in mm : 12.45 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 161.0	Rated speed rpm : 1100 Aneroid pressure
Tolerance	+ hPa : 1600 + Del. quantity
cm3/1000 strokes : + 1.0	+ cm3/1000 strokes : 161.0 + Tolerance
Check tolerance cm3/1000s. : +- 3.0	cm3/1000 strokes : + 1.0 Check tolerance
Spreed	cm3/1000s. : + 3.0 Spreed
Tolerance	Tolerance + cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	1
	CONTROL LEVER
Rated speed rpm : 425	T control lever
Rack travel in mm : 5.90	position degree : 97.0
Rack travel in mm : 5.90  Tolerance mm : +- 0.10	+ tolerance degree : +- 4.0
Del. quantity	RATED SPEED
cm3/1000 strokes : 29.0	rack travel mm : 11.45
Tolerance 3.0	Rated speed rpm : 1145
cm3/1000 strokes : +- 2.0 Check tolerance	+ Tolerance 1/min : +- 5
cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 1205
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0	†
Check tolerance - cm3/1000S. : 8.0 -	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
	Rated speed rpm : 1350
	+
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR -	Rated speed rpm : 1215
	Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION -	+
-	
control lever -	LOW IDLE
position degree : - 3	
Rated speed rpm : 800 -	control lever
	position degree : 75.0
Rack travel in mm: 0.50	tolerance degree : +- 4.0
Tolerance mm : +- 0.20	† Setting point w/out bumper spring
governor spring	- Second bottle woode builder spring
pre-tension -	Rated speed rpm : 425
click setting $x : 4.25$	rack travel mm : 5.40 Tolerance mm : +- 0.10
1	+ Folerance mm : +- 0.10

Rated speed rpm : 100 Aneroid pressure hPa 1600 CRT mm min. : > 19.00 Rated speed rpm 700 Del. quantity Testing: cm3/1000 strokes : 167.5 Tolerance 425 cm3/1000 strokes : +-Rated speed rpm 2.0 rack travel mm 5.90 Check tolerance Tolerance mm : + 0.10cm3/1000s. : +- 4.0 TORQUE CONTROL Aneroid pressure Rated speed rpm 1100 hPa 12.45 rack travel mm Rated speed rpm 500 : **←** 0.05 Tolerance mm Del. quantity cm3/1000 strokes : 71.0 700 Rated speed rpm Tolerance rack travel mm 12.80 cm3/1000 strokes : +- 2.0: +- 0.10 Tolerance mm Check tolerance cm3/1000s. : +-ANEROID/ALTITUDE COMPENSATOR TEST STARTING FUEL DELIVERY SETTING Rated speed rpm 100 rack travel mm 21.00 Rated speed rpm 500 Tolerance mm : +- 0.50Pressure hPa 1600 Del. quantity cm3/1000 strokes : 105.0 Rated speed rpm 500 Tolerance Pressure hPa cm3/1000 strokes : + 20.0rack travel mm 8.80 Check tolerance Tolerance mm : **←** 0.20 cm3/1000s.: +- 25.0 **MEASUREMENT** Rated speed rpm 500 LOW IDLE Pressure hPa 960 rack travel mm 11.70 Rated speed rpm : 425 : +- 0.20Tolerance mm Rack travel in mm : 5.90 475 Pressure hPa Tolerance mm : +- 0.10 rack travel mm 9.80 Del. quantity : **←** 0.05 Tolerance mm cm3/1000 strokes : 29.0 Tolerance cm3/1000 strokes : +-2.0 Start interlock Check tolerance cm3/1000s. : +-4.5 Rated speed rpm 100 Spreed : > Tolerance Check cm3/1000 strokes : 6.0 speed 1/min : > 80 Check tolerance cm3/1000s. 8.0 FUEL DELIVERY CHARACTERISTICS

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 12.05.98 : ISO 4113

Combination No. : 0 402 746 611

Injection pump

Pump designation : PES6P120A320RS7372

EP type number : 0 412 726 940

Governor

Governer design. : RQV250...1400PA1279K

Governer no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec, information Customer : CDC : 6BTA Motor Power KW : 235.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

H04

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05 Check tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 11.00 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 186.5

	+ Rated speed rpm : 1860
Tolerance	guide sleeve
cm $3/1000$ strokes : $\leftarrow$ 1.0	travel mm : 13.50 Tolerance mm : +- 0.50
Charle to Language	+ Tolerance mm : + U.5U
Check tolerance cm3/1000S. : +- 4.0	† <u></u>
CIID/ 10003 += 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	+ TOLE LONG DELIVERY AT THE LONG STOP
Sp. 552	Rated speed rpm : 1400
Tolerance	+ Aneroid pressure
cm3/1000 strokes : 8.0	+ hPa : 1200 + Del. quantity
Check tolerance	+ cm3/1000 strokes : 186.5
cm3/1000s. : 12.0	+ Tolerance + cm3/1000 strokes : +- 1.0
	+ Check tolerance
	+ cm3/1000s. : +- 4.0
Rated speed rpm : 300	+ Spreed
	+ Tolerance
Rack travel in mm : 7.00	+ cm3/1000 strokes : 8.0
Tolerance mm : + 0.20	+ Check tolerance
Del. quantity	+ cm3/1000s. : 12.0
cm3/1000 strokes : 28.0	†
Tolerance cm3/1000 strokes : +- 3.0	†
Check tolerance	CONTROL LEVER
cm3/100% : +- 5.0	T CONTINUE ELVER
Spreed	+ control lever
Tolerance	position degree : 121.5
cm3/1000 strokes : 5.0	+ tolerance degree : +- 4.0
Check tolerance	+
cm3/1000s. : 8.0	+ RATED SPEED
	+ rack travel mm : 12.80
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1465 + Tolerance 1/min : +- 5
WITH GOVERNOR	T Toter with 17 mills . 4-2 3
WEITH COVERNOR	rack travel mm : 6.80
	Rated speed rpm : 1580
GUIDE SLEEVE TRAVEL	+ Tolerance 1/min : +- 15
	+
Rated speed rpm : 1570	rack travel mm : 0.50
guide sleeve travel mm : 9.90	+ Tolerance mm : +- 0.50
Tolerance mm : +- 0.15	+ Rated speed rpm : 1725
TOTEL MILLS TAIL	<u> </u>
Rated speed rpm : 250	<del> </del>
guide sleeve	
travel mm : 1.00	+ LOW IDLE
Tolerance mm : +- 0.20	+
0-4-4 4	†
Rated speed rpm : 986	+ control lever + position degree : 77.0
guide sleeve travel mm : 5.80	+ tolerance degree : +- 4.0
Tolerance mm : +- 0.25	+ total and degree 4.0
	Control lever difference
Rated speed rpm : 480	+ Grad : 48.5
guide sleeve	tolerance degree : +- 6.0
travel mm : 3.00	+
Tolerance mm : +- 0.25	Setting point w/out bumper spring

Rated speed rpm	: 200	+	Check	
CRT mm min.	: > 8.60	‡	speed 1/min Check	: > 80
Testing:		+	speed 1/min	: < 250
Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.00 : +- 0.20	‡	FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm	: 350	‡	Anercid pressure hPa Rated speed rpm	: 1200 : 1000
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1400 : 13.45		Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: +- 3.0
Rated speed rpm	: 1000		cm3/1000s. Spreed Tolerance	
rack travel mm Tolerance mm	: +- 0.10	<u> </u>	cm3/1000 strokes Check tolerance	
Rated speed rpm rack travel mm Tolerance mm	: 13.00	+	cm3/1000s.	: 12.0
ANEROID/ALTITUDE		<del></del> ‡	rack travel mm Tolerance mm	: 13.00 : +- 0.20
COMPENSATOR TEST		† + +	Aneroid pressure	: -
SETTING		‡	Rated speed rpm Del. quantity	: 1000
Rated speed rpm Pressure hPa	: 1400 : 1200	+	cm3/1000 strokes Tolerance	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -	† † †	cm3/1000 strokes Check tolerance cm3/1000s.	
MEASUREMENT		-	STARTING FUEL DEL	IVERY
Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 620 : 12.30 : + 0.20 : 280 : 10.65	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 21.00 : + 0.50 : 170.5 : + 20.0
Start interlock	0.20	<del> </del>	cm3/1000S.	23.0
Rated speed rpm Rated speed rpm		† + +	LOW IDLE	: 300

Rask travel in mm Tolerance mm	:	+	7.00 0.20
Del. quantity cm3/1000 strokes	:		28.0
Tolerance cm3/1000 strokes	:	+	3.0
Check tolerance cm3/1000s.	:	+-	5.0
Spreed Tolerance			
cm3/1000 strokes	:		5.0
Check tolerance cm3/1000S.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16.02.98 : ISO 4113

Combination No. : 0 402 746 619

Injection pump

Pump designation : PES6P120A720RS7423

EP type number : 0 412 726 963

Governor

Governer design. : RQV325...900PA909

: -14K

Governer no. : 0 421 815 533

Cust. part No. : 313GC5229-P4

Customer-spec. information Customer : MACK : EN7400 Motor Power KW : 298.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8 Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance "NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes	: 277.5	+ Tolerance mm	: +- 0.25
Tolerance	1.0	Rated speed rpm guide sleeve	: 1350
cm3/1000 strokes	: +- 1.0	travel mm Tolerance mm	: 13.50 : ← 0.50
Check tolerance cm3/1000S.	: +- 4.0	‡	
Spreed		+	Y AT FULL LOAD STOP
Tolerance		+ Rated speed rpm + Aneroid pressure	: 900
cm3/1000 strokes	: 5.0	hPa Del. quantity	: 1500
Check tolerance		+ cm3/1000 strokes	: 277.5
cm3/1000S.	: 9.0	+ Tolerance + cm3/1000 strokes	: +- 1.0
		+ Check tolerance	
Dated aroud now	: 325	+ cm3/1000s.	: +- 4.0
Rated speed rpm	: 325	+ Spreed + Tolerance	
Rack travel in mm	: 5.10	+ cm3/1000 strokes	: 5.0
Tolerance mm	: <del></del> 0.10	+ Check tolerance	
Del. quantity cm3/1000 strokes	: 44.0	† cm3/1000s.	: 9.0
Tolerance	: 44.0	I	
cm3/1000 strokes	: +- 3.0	ļ <del></del>	
Check tolerance		+ CONTROL LEVER	
cm3/1000s.	: <b>←</b> 5.0	+	
Spr <del>ee</del> d Tolerance		+ control lever	: 115.0
cm3/1000 strokes	: 8.0	<ul><li>position degree</li><li>tolerance degree</li></ul>	
Check tolerance		+	
cm3/1000s.	: 12.0	+ RATED SPEED	
		+ rack travel mm	: 15.00
(B) SETTING OF IN	JECTION PHMP	+ Rated speed rpm + Tolerance 1/min	: 945 : +- 5
WITH GOVERNOR	DECTION TO R	Check	
		speed 1/min	: +- 10
GUIDE SLEEVE TRAVI	FL	t rack travel mm	: 4.00
		+ Rated speed rpm	
Rated speed rpm	: 957	+ Tolerance 1/min	: +- 15
guide sleeve travel mm	: 8.66	+ Check + speed 1/min	: +~ 20
Tolerance mm	: +- 0.15	+ speed 17 iii 111	. 1- 20
		rack travel mm	: 0.50
Rated speed rpm	: 325	+ Tolerance mm	: + 0.50
guide sleeve travel mm	: 1.79	+ Rated speed rpm	: 1200
Tolerance mm	: + 0.20	I	
		+	
Rated speed rpm	: 763	<del></del>	<del></del>
guide sleeve travel mm	: 7.04	+ LOW IDLE	
Tolerance mm	: 7.04 : + 0.25	I	
TO COT WITHOUT THE		control lever	
Rated speed rpm guide sleeve	: 520	<ul><li>position degree</li><li>tolerance degree</li></ul>	
travel mm	: 4.05	+	

H09

Setting point w/	out bumper spring	+ Check
Rated speed rpm	: 225	speed 1/min : > 80 Check
CRT mm min.	: > 7.00	speed 1/min : < 285
Testing:		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 5.10	Aneroid pressure
Rated speed rpm	: 425	+ hPa : 1500 + Rated speed rpm : 625 + Del. quantity
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 16.00	+ cm3/1000 strokes : 305.5 + Tolerance - cm3/1000 strokes : + 3.0 + Check tolerance - cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolerance mm	: 15.60	Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Rated speed rpm rack travel mm Tolerance mm	: 500 : 13.90 : + 0.20	rack travel mm : 13.90 Tolerance mm : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure hPa : - Rated speed rpm : 400
SETTING		+ Del. quantity + cm3/1000 strokes : 159.0
Rated speed rpm Pressure hPa	: 900 : 1500	Tolerance cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : – : 8.50 : +- 0.20	cm3/1000s. : +- 4.0
MEASUREMENT		STARTING FUEL DELIVERY
Rated speed rpm	: 900	Rated speed rpm : 100 rack travel mm : 11.20 Tolerance mm : +- 1.00
Pressure hPa rack travel mm Tolerance mm	: 980 : 14.40 : ← 0.20	Del. quantity - cm3/1000 strokes : 215.0 - Tolerance - cm3/1000 strokes : + 20.0
Pressure hPa rack travel mm Tolerance mm	: 450 : 10.35 : +- 0.05	Check tolerance cm3/1000s. : +- 25.0
Start interlock		LOW IDLE
Rated speed rpm Rated speed rpm		+ Rated speed rpm : 325

Rack travel in mm Tolerance mm	:	+-	5.10 0.10
Del. quantity cm3/1000 strokes			44.0
Tolerance	•		77.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s.		+-	5.0
Spreed	•	•	3.0
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/1000s.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.12.97 Test oil : ISO 4113

Combination No. : 0 402 776 820

Injection pump

Pump designation : PES6P120A720RS7382

EP type number : 0 412 726 943

Governor

Governer design. : RSV400...1100P0A547

: ન્6

Governer no.

: 0 421 833 488

Cust. part No. : RE501785

Customer-spec. information

Customer : DEERE

Motor

: 6081 AF001

Power KW

: 205.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

: + 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery mark

°NW after s.o.d. : 7.50 Tolerance : ← 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

14.00

Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

H12

		+	
Rack travel in mm Tolerance mm		FULL LOAD DELIVE	RY AT FULL LO
Del. quantity cm3/1000 strokes	: 198.0	Rated speed rpm Aneroid pressure	: 1100
Tolerance cm3/1000 strokes	· + 1.0	+ hPa - Del. quantity - cm3/1000 strokes	: 1400 : 198.0
Check tolerance cm3/1000s.	· + 4.0	+ Tolerance + cm3/1000 strokes + Check tolerance	: + 1.0
Spreed		+ cm3/1000s. + Spreed + Tolerance	: ← 4.0
Tolerance cm3/1000 strokes	: 5.0	cm3/1000 strokes Check tolerance cm3/1000s.	: 5.0 : 9.0
Check tolerance cm3/1000s.	: 9.0		. ,.0
		CONTROL LEVER	
Rated speed rpm		control lever position degree	
Rack travel in mm Tolerance mm Del. quantity		tolerance degree + RATED SPEED	: +- 4.0
cm3/1000 strokes Tolerance cm3/1000 strokes		rack travel mm Rated speed rpm Tolerance 1/min	
Check tolerance cm3/1000s.	: +- 5.0	rack travel mm	: 4.00
Spreed Tolerance	9.0	Rated speed rpm Tolerance 1/min	: 1225 : +- 5
cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0	rack travel mm Tolerance mm	: 0.85 : ← 0.55
(0) 05-77110 05-711	15657011 51 815	+ Rated speed rpm	
(B) SETTING OF INJ WITH GOVERNOR	JECITON PUMP	rack travel mm Rated speed rpm Tolerance 1/min	: 1230
GUIDE SLEEVE POSIT	TION	_	
control lever	_	LOW IDLE	
position degree Rated speed rpm	: 800	control lever position degree	
Rack travel in mm Tolerance mm		tolerance degree	
governor spring pre-tension		+ Setting point w/o + Rated speed rpm	, ,
click setting x	: 3.25	rack travel mm Tolerance mm	: 5.35

FULL LOAD DELIVER	RY AT FULL LOAD STOP
Rated speed rpm	: 1100
Aneroid pressure	
hPa	: 1400
Del. quantity	400.0
cm3/1000 strokes Tolerance	: 198.0
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: <del></del> 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	. 0.0
cm3/1000s.	: 9.0
CONTROL LEVER	
control lever position degree	: 95.0
tolerance degree	: +- 4.0
	4.0
RATED SPEED	
rack travel mm	: 10.80
Rated speed rpm	: 1170
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1225
Tolerance 1/min	: +- 5
	0.05
rack travel mm	: 0.85 : +- 0.55
Tolerance mm Rated speed rpm	: +- 0.55 : 1300
rated speed thiii	. 1300
rack travel mm	: 4.00
Rated speed rpm	: 1230
Tolerance 1/min	: +- 15
LOW IDLE	
nombrol lover	
control lever position degree	• 72.0
position degree tolerance degree	. 'c.u · + 4 N
coterance degree	, , 4.0
Setting point w/o	ut bumper spring
	· =

Rated speed rpm : 100 CRT mm min. : > 19.00 Testing: Rated speed rpm : 400 rack travel mm : 5.85 Tolerance mm : + 0.10 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 11.80 Tolerance mm : +- 0.05 Rated speed rpm : 800 rack travel mm : 12.40 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1400 Rated speed rpm : 500 Pressure hPa : ressure hPa : - rack travel mm : 8.75 : +- 0.10 Tolerance mm MEASUREMENT Rated speed rpm : 500 Pressure hPa : 880 rack travel mm : 11.50 Tolerance mm : + 0.20 Pressure hPa : 450 rack travel mm : 9.70 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure : 1400 hPa Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 211.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 93.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes :  $\leftarrow$  20.0 Check tolerance cm3/1000s. : +- 25.0 LOW IDLE Rated speed rpm : 400 Rack travel in mm: 5.85 Tolerance mm :  $\leftarrow$  0.10 Del. quantity cm3/1000 strokes : 28.5 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.02.98 Test oil : ISO 4113

Combination No. : 0 402 776 838

Injection pump

Pump designation : PES6P120A720RS7382

EP type number : 0 412 726 943

Governor

Governer design. : RSV625...1100P0A547

: −14 Governer no. : 0 421 833 545

Cust. part No. : RE67358

Customer-spec. information Customer : DEERE

Motor

: 6081 HZ001

Power KW

: 214.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp, °C

Tolerance °C : + 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : ← 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5- 3- 6- 2-

: 4

Phasing

: 0-60-120-180-240

: -300

Start of delivery mark

\*NW after s.o.d. : 9.50

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

: 14.00

Difference ° CS : 2.50

BASIC SETTING

Rack travel in mm : 11.45 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 196.0	Aneroid pressure hPa : 2000
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 196.0 Tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Spreed	Spreed Tolerance cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
<del></del>	
Rated speed rpm : 625	control lever position degree : 97.0 tolerance degree : +- 4.0
Rack travel in mm: 5.10 Tolerance mm: + 0.10 Del. quantity	RATED SPEED rack travel mm : 10.40
cm3/1000 strokes : 21.5 Tolerance cm3/1000 strokes : +- 3.0	Rated speed rpm : 1175 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 5.0	rack travel mm : 4.00 Rated speed rpm : 1235
Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1350
cm3/1000s. : 12.0	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1235 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : -3 Rated speed rpm : 800	control lever position degree : 80.0 tolerance degree : +- 4.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Setting point w/out bumper spring
governor spring  pre-tension  aligh cotting y 3.75	Rated speed rpm : 625 rack travel mm : 4.60 Tolerance mm : +- 0.10
click setting x : 3.75	Rated speed rpm : 100

CRT mm min. : > 19.00 Testing: Rated speed rpm : 625 rack travel mm : 5.10 Tolerance mm : + 0.10 TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 11.45 : +- 0.05 Tolerance mm 700 Rated speed rpm : 13.00 rack travel mm Tolerance mm : + 0.10ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa 2000 Rated speed rpm : 500 Pressure hPa 9.60 rack travel mm : +- 0.20 Tolerance mm **MEASUREMENT** Rated speed rpm 500 : 1350 Pressure hPa rack travel mm : 12.30 Tolerance mm : **←** 0.20 : 630 Pressure hPa 10.50 rack travel mm : : +- 0.05 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure 2000 hPa Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 262.0 Tolerance

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		700
Del. quantity			
cm3/1000 strokes	:		136.5
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s.	:	+-	4.0

STARTING FUEL DEL	I۷۱	ERY	
Rated speed rpm rack travel mm Tolerance mm Del. quantity	:		100 20.50 0.50
cm3/1000 strokes Tolerance	:		105.0
cm3/1000 strokes Check tolerance	:	+-	20.0
cm3/1000s.	:	+-	25.0

1	LOW IDLE				
Į	Rated speed rpm	:		625	
•	Rack travel in mm Tolerance mm Del. quantity		+	5.10 0.10	
(	cm3/1000 strokes Tolerance	:		21.5	
(	cm3/1000 strokes Check tolerance	:	+-	3.0	
(	cm3/1000s. Spreed	:	+-	5.0	
C	Tolerance cm3/1000 strokes Check tolerance	:		8.0	
	cm3/1000s.	:		12.0	

End of test specification sheet

cm3/1000 strokes : +-

Check tolerance cm3/1000s.

3.0

6.0

: +-

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 403 466 183DA

Injection pump

Pump designation : PES6MW100/120RS1247

EP type number : 0 413 406 248

Governor

Governer design. : RSV550...1100MW5A415

Governer no. : 0 420 085 306

Cust. part No. : 3935489

Customer-spec. information

Customer : CDC Motor

: 6 CTA

Power KW

: 179.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: **←** 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

H18

x inside diameter : 2.0

x Length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : +- 1.0

Prestroke mm : 3.20 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery blocking

"NW after s.o.d. : 8.50

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel

15.00

Difference ° CS : 1.50

	† .
BASIC SETTING	governor spring pre-tension
Rated speed rpm : 1100	click setting x : 4.50
Rack travel in mm : 13.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.05	Rated speed rpm : 1100 Aneroid pressure
Del. quantity cm3/1000 strokes : 163.0	hPa : 1200 + Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : 163.0 - Tolerance - cm3/1000 strokes : +- 1.0
Check tolerance	+ Check tolerance cm3/1000s. : +- 4.0
cm3/1000s. : +- 4.0  Spreed	+ Spreed + Tolerance cm3/1000 strokes : 4.0
Tolerance	+ Check tolerance + cm3/1000s. : 7.5
cm3/1000 strokes : 4.0	+ tilis/1000s. : 7.3
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever position degree : 104.0
Rated speed rpm : 550	tolerance degree : +- 4.0
Rack travel in mm : 5.05	RATED SPEED
Tolerance mm : + 0.10 Del. quantity	+ rack travel mm : 12.20 + Rated speed rpm : 1170
cm3/1000 strokes : 23.0	Tolerance 1/min : +- 5
Tolerance	+ Check
cm3/1000 strokes : +- 2.0 Check tolerance	+ speed 1/min : +- 10
cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 1255
Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : 3.5 Check tolerance	+ Check + speed 1/min : +- 10
m3/1000s. : 5.5	+
	rack travel mm : 1.00
(B) SETTING OF INJECTION PUMP	Tolerance mm : +- 0.70 Rated speed rpm : 1300
VITH GOVERNOR	T rated speed (pill . 1500
—	rack travel mm : 4.00
	+ Rated speed rpm : 1265
GUIDE SLEEVE POSITION	
POINT OFFIRE   COTITOR	speed 1/min : +- 20
control lever	Ţ
position degree : -3	+
Rated speed rpm : 800	LOU TOUR
Rack travel in mm : 0.50	LOW IDLE
Tolerance mm : + 0.20	+

H19

control lever position degree : 78.0 tolerance degree : + 4.0
Control lever difference
Grad : 26.0 tolerance degree : +- 6.0
Setting point w/out bumper spring
Rated speed rpm : 550
rack travel mm : 4.55 Tolerance mm : + 0.10
Toterance man . +- 0.10
Rated speed rpm : 100
CRT mm min. : > 19.00
Testing:
Rated speed rpm : 550 rack travel mm : 5.05
rack travel mm : 5.05 Tolerance mm : +- 0.10
roterance min . To 0.10
TORQUE CONTROL
Rated speed rpm : 1100
rack travel mm : 13.20
Tolerance mm : + 0.05
Rated speed rpm : 750
rack travel mm : 13.90 Tolerance mm : +- 0.10
Toterarice min : 0.(0
Rated speed rpm : 1000 rack travel nm : 13.90
rack travel mm : 13.90 Tolerance mm : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST
SETTING
Rated speed rpm : 500
Pressure hPa : 1200
Rated speed rpm : 500
Pressure hPa : - rack travel mm : 11.00
Pressure hPa : - rack travel mm : 11.00 Tolerance mm : +- 0.20
MEASUREMENT
Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.30

Pressure hPa rack travel mm Tolerance mm	: 560 : 11.80 : +- 0.20	
FUEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1200 : 750 : 177.5 : +- 2.0 : +- 5.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 6.0 : 9.0	
rack travel mm Tolerance mm	: 13.90 : + 0.20	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 119.5 : + 1.0 : + 3.0	
STARTING FUEL DEL	IVERY	<del></del>
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		
LOW IDLE		

Tolerance mm : + 0.20

H20

Rated speed rpm	:	550
Rack travel in mm Tolerance mm	: : +-	5.05 0.10
Del. quantity cm3/1000 strokes Tolerance	:	23.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s. Spreed	: +-	4.5
Tolerance cm3/1000 strokes	•	3.5
Check tolerance cm3/1000s.	:	5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.10.98 Test oil : ISO 4113

Combination No. : 0 401 816 715

Injection pump

Pump designation : PE6P120A300RS3315 EP type number : 0 411 826 808

Governor

Governer design. : Governer no. :

Cust. part No. : 866027-P04 v.10.93

Customer—spec. information Customer : PENTA Motor : TAD 730 G

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 205
Tolerance l/h : + 20.0

Test nozzle holde assembly : 1 688 901 103

Opening pressure

: 208.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.90 Tolerance mm : + 0.50

Firing order : 1-5- 3- 6- 2-: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm : 10.90 Tolerance mm : +- 0.10
Del. quantity cm3/1000 strokes : 243.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 4.0
Spreed
Tolerance cm3/1000 strokes : 7.0
Check tolerance cm3/1000s. : 11.0
Rated speed rpm : 300
Rack travel in mm : 3.90 Tolerance mm : + 0.30
Del. quantity cm3/1000 strokes : 23.0
Tolerance cm3/1000 strokes : +- 3.0
Check tolerance cm3/1000s. : +- 6.0 Spreed
Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 8.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR
FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 700 Aneroid pressure
hPa : - Del. quantity
cm3/1000 strokes : 243.0 Tolerance
cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 4.0 Spreed
Tolerance cm3/1000 strokes : 7.0

Check tolerance cm3/1000S.	: 11.0
LOW IDLE	
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 3.90 : \( \dots \) 0.30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 10.90 : +- 0.10
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm Del. quantity	: 3.90 : + 0.30
cm3/1000 strokes Tolerance	: 23.0
cm3/1000 strokes	: + 3.0
Check tolerance cm3/1000s. Spreed	: ← 6.0
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.97 Test oil : ISO 4113

Combination No. : 0 401 846 843

Injection pump

Pump designation : PE6P12OA72ORS3069 EP type number : 0 411 826 712

Governor

Governer design. : RQV300...1000PA501

: -4

Governer no. : 0 421 813 609

Cust. part No. :

Customer—spec. information Customer : IVECO-FIAT Motor : 8210.22.371

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 206.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

H24

Tolerance cm3/1000 strokes	: 5.0	Aneroid pressure hPa : 700 Del. quantity
Check tolerance cm3/1000s.	: 9.0	cm3/1000 strokes : 206.0 Tolerance
	<del></del> ‡	cm3/1000 strokes : + 1.0 Check tolerance
Rated speed rpm	: 300	cm3/1000s. : +- 4.0 Spreed Tolerance
Rack travel in mm Tolerance mm		cm3/1000 strokes : 5.0 Check tolerance
Del. quantity cm3/1000 strokes Tolerance	: 20.0	cm3/1000s. : 9.0
cm3/1000 strokes Check tolerance	+	CONTROL LEVER
cm3/1000S. Spreed Tolerance	: +- 6.0 +	control lever position degree : 120.0
cm3/1000 strokes Check tolerance	+	tolerance degree : + 4.0
cm3/1000s.	: 12.0 +	RATED SPEED rack travel mm : 11.50 Rated speed rpm : 1045
(B) SETTING OF INJE	ECTION PUMP	Tolerance 1/min : +- 5 Check
	‡	speed 1/min : +- 10
GUIDE SLEEVE TRAVEL	- 🗼	rack travel mm : 4.00 Rated speed rpm : 1145
Rated speed rpm : guide sleeve	+	Tolerance 1/min : +- 15 Check
travel mm : Tolerance mm :	8.10 + + 0.15 +	speed 1/min : +- 20 rack travel mm : 0.50
guide sleeve	325	Tolerance mm : +- 0.50 Rated speed rpm : 1250
travel mm : Tolerance mm :	1.70 + 0.20	
guide sleeve	450	LOW IDLE
travel mm : Tolerance mm :	3.10 + 0.20	control lever
Rated speed rpm : guide sleeve	800	position degree : 67.0 tolerance degree : + 4.0
travel mm : Tolerance mm :	5.90 + 0.20	Setting point w/out bumper spring
Rated speed rpm : guide sleeve	1300	Rated speed rpm : 100
travel mm : Tolerance mm :	11.50 + 0.50	CRT mm min. : > 7.70 Testing:
FULL LOAD DELIVERY	AT FULL LOAD STOP	Rated speed rpm : 300
Rated speed rpm :	1000	rack travel mm : 6.20 Tolerance mm : + 0.10

Rated speed rpm	: 370
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.55 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.60 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 12.55
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.80 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 230 : 10.85 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 280 : 11.85 : ← 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: <del>-</del> : 500
Del. quantity cm3/1000 strokes Tolerance	: 132.0
cm3/1000 strokes Check tolerance	: ← 1.0
cm3/1000S.	: +- 4.0

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	200.0
Tolerance cm3/1000 strokes	: +	15.0
Check tolerance cm3/1000s.	: +-	19.0

	OW	TDL	_
ъ.	VW.		-10

Rated speed rpm	:		300	
Tolerance mm	:	+-	6.20 0.10	
Del. quantity cm3/1000 strokes Tolerance	:		20.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+-	6.0	
Tolerance cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:		12.0	

### Note remarks

Refer to Service Info for test and \* adjustment instructions.

See microcard(s) W400/...

Edition : 21.11.91 Test oil : ISO 4113

Combination No. : 0 402 016 022

Injection pump

Pump designation : PES6P120A700RS532-1

EP type number : 0 412 026 061

Governor

Governer design. : Governer no. :

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO Motor : 8361 SRM 37

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Del. quantity cm3/1000 strokes : 215.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm Del. quantity	:		300
cm3/1000 strokes Tolerance	:		19.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s.	:	+-	6.0
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:		8.0
cm3/1000s.	:		12.0

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

## FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm Aneroid pressure	: 1200
hPa	: -
Del. quantity	245.0
cm3/1000 strokes Tolerance	: 215.0
cm3/1000 strokes	: <del>+-</del> 1.0
Check tolerance	: +- 4.N
cm3/1000s. Spreed	: +- 4.0
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

## LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

Del. quantity cm3/1000 strokes : 19.0

Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.09.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 046 880

Injection pump

Pump designation : PES6P120B320RS3377

EP type number : 0 412 026 796

Governor

Governer design. : RQ750PA1304 Governer no. : 0 421 801 811

Cust. part No. :

Customer-spec. information Customer : PERKINS

Motor : EAGLE2006TWG2

Power KW : 287.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 115 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-4-2-6-3-

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.90 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 272.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.	: ← 4.0	+ Aneroid pressure + hPa :	-
Spreed		_	272.0
Tolerance cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : +- Check tolerance	1.0
Check tolerance		cm3/1000s. : +- Spreed	4.0
cm3/1000s.	: 9.0	Tolerance cm3/1000 strokes :	5.0
		Check tolerance cm3/1000s. :	9.0
Rack travel in m		Ŧ	
Tolerance mm Del. quantity		CONTROL LEVER	
cm3/1000 strokes Tolerance	: 30.0	control lever	
cm3/1000 strokes	: + 4.0	position degree :	
Check tolerance cm3/1000s.	: <del>+</del> 6.0	tolerance degree : +-	4.0
Spreed		control lever	0/ 0
Tolerance cm3/1000 strokes		position degree :	
Check tolerance		tolerance degree : +-	4.0
cm3/1000s.		+	
		ASSEMBLY GOVERNOR SETTIN	lG
(B) SETTING OF IN	JECTION PUMP	Rated speed rpm :	765
WITH GOVERNOR		rack travel mm : 1	
		<del>+</del>	
		Rated speed rpm :	785
GUIDE SLEEVE TRAV	/EL	+ Tolerance 1/min : +-	
		+ Tolerance 1/min : +-	
Rated speed rpm		+ Tolerance 1/min : +- + rack travel mm : +	5 4.00
	: 763 : 4.57	+ Tolerance 1/min : +-	5 4.00 0.50
Rated speed rpm guide sleeve	: 763	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +-	5 4.00 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm :	5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 763 : 4.57 : ← 0.15 : 790	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : Rated speed rpm :	5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : Rated speed rpm :	5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 763 : 4.57 : ← 0.15 : 790	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : Rated speed rpm : rack travel mm : 1	5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : + 0.15 : 790 : 8.50 : + 0.25	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1 Rated speed rpm : Tolerance 1/min : +-	5 4.00 0.50 0.50 900 766 1.90 786 5
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 763 : 4.57 : + 0.15 : 790 : 8.50 : + 0.25 : 809	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1 Rated speed rpm : Tolerance 1/min : +-	5 4.00 0.50 0.50 900 766 1.90
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 763 : 4.57 : + 0.15 : 790 : 8.50 : + 0.25 : 809 : 12.00	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : rack travel mm : 1  Rated speed rpm : rack travel mm : +- rack travel mm : +-	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 763 : 4.57 : + 0.15 : 790 : 8.50 : + 0.25 : 809	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : rack travel mm : +- rack travel mm : rack travel mm :	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50 : ← 0.25 : 809 : 12.00 : ← 0.25	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1 Rated speed rpm : rack travel mm : +- rack travel mm : rack travel mm : Tolerance mm : +-	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50 : ← 0.25 : 809 : 12.00 : ← 0.25 : 860	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : rack travel mm : +- rack travel mm : rack travel mm : Tolerance mm : +-	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50 : ← 0.25 : 809 : 12.00 : ← 0.25 : 860 : 13.50	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : rack travel mm : +- rack travel mm : rack travel mm : Rated speed rpm :	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50 : ← 0.25 : 809 : 12.00 : ← 0.25 : 860	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : Tolerance 1/min : +- rack travel mm : Tolerance mm : +- Rated speed rpm : Rated speed rpm : Rated speed rpm : Rated speed rpm : Rated speed rpm :	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50 0.50 900
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : + 0.15 : 790 : 8.50 : + 0.25 : 809 : 12.00 : + 0.25 : 860 : 13.50 : + 0.50	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : Tolerance 1/min : +- rack travel mm : Tolerance mm : Rated speed rpm : rack travel mm : Rated speed rpm : rack travel mm : Rated speed rpm : Rated speed rpm :	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50 900 767 1.90
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : ← 0.15 : 790 : 8.50 : ← 0.25 : 809 : 12.00 : ← 0.25 : 860 : 13.50	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : Tolerance 1/min : +- rack travel mm : Tolerance mm : Rated speed rpm : rack travel mm : Rated speed rpm :	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50 0.50 900 767 1.90
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 763 : 4.57 : +- 0.15 : 790 : 8.50 : +- 0.25 : 809 : 12.00 : +- 0.25 : 860 : 13.50 : +- 0.50	Tolerance 1/min : +- rack travel mm : rack travel mm : Tolerance mm : +- Rated speed rpm : rack travel mm : 1  Rated speed rpm : Tolerance 1/min : +- rack travel mm : Tolerance mm : +- Rated speed rpm : Tolerance mm : +- Rated speed rpm : Rated speed rpm : Rated speed rpm : Rated speed rpm : Rated speed rpm : Tolerance 1/min : +-	5 4.00 0.50 0.50 900 766 1.90 786 5 4.00 0.50 900 767 1.90

rack travel mm	:	0.50
Tolerance mm	: +-	0.50
Rated speed rpm	:	900
Bakad amand unu		7/0

Rated speed	rpm	:	768
rack travel	mm	:	11.90

Rated speed rpm	•	788
Tolerance 1/min	: +-	5
rack travel mm	:	4.00

Rated speed	rpm	:	769
rack travel	mm	:	11.90

Rated speed rpm	:	789
Tolerance 1/min	: +-	5
rack travel mm	:	4.00

Rated speed	rpm	:	770
rack travel	mm	:	11.90

Rated speed rpm	:	790
Tolerance 1/min	: +-	5
rack travel mm	•	4.00

rack travel mm		0.50
Tolerance mm	: +-	0.50
Rated speed rpm	*	900

TORQUE	CONTROL
_	

Rated speed rpm	:		700
rack travel mm	:		12.90
Tolerance mm	:	+-	0.05

## STARTING FUEL DELIVERY

Rated speed rpm	•	100
	•	4.
rack travel mm	:	17.90
Tolerance mm	: +-	0.30
Del. quantity		

Del. quantity cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  25.0

Check tolerance

cm3/1000s. : +- 29.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.10.98 Test oil : ISO 4113

Combination No. : 0 402 076 801A

Injection pump

Pump designation : PES6P120A1320/5RS337

: 2Y

EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : D 421 833 553

Cust. part No. : 1388638

Customer—spec. information Customer : SCANIA

Motor : DS1196A, -97A

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-,5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

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	-
Rack travel in mm : 15.65 - Tolerance mm : +- 0.05 -	- Rated speed rpm : 700 - Aneroid pressure
Del. quantity	hPa : 1500 Del. quantity
cm3/1000 strokes : 234.0	cm3/1000 strokes : 234.0 Tolerance
Tolerance cm3/1000 strokes : + 1.0	- cm3/1000 strokes : +- 1.0 - Check tolerance
Check tolerance	- cm3/1000s. : +- 7.0 - Spreed
cm3/1000s. : +- 7.0	- Tolerance - cm3/1000 strokes : 8.0
Spreed	- Check tolerance - cm3/1000s. : 12.0
Tolerance cm3/1000 strokes : 8.0	
Check tolerance cm3/1000s. : 12.0	CONTROL LEVER
	- control lever
	- position degree : 34.0 - tolerance degree : +- 4.0
Rack travel in mm: 6.00	- - control lever
Tolerance mm : + 0.20 + Del. quantity +	- position degree : 84.0 - tolerance degree : +- 4.0
cm3/1000 strokes : 20.0	- toterance degree . + 4.0
Tolerance + 4.0 +	- - ASSEMBLY GOVERNOR SETTING
Check tolerance	. Wasel-BC1 GOVERNOR SETTING
cm3/1000s. : + 6.0	- Rated speed rpm : 750
Spreed + Tolerance +	- rack travel mm : 14.60
cm3/1000 strokes : 5.0	Rated speed rpm : 788
Check tolerance	Tolerance 1/min : + 4
cm3/1000s. : 9.0	rack travel mm : 4.00
1	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP	Tolerance mm : +- 0.55
WITH GOVERNOR	Rated speed rpm : 850
	Rated speed rpm : 751
GUIDE SLEEVE POSITION	rack travel mm : 14.60
#	Rated speed rpm : 789
control lever	Tolerance 1/min : +- 4
position degree : - 3 Rated speed rpm : 800	rack travel mm : 4.00
rated speed (pill . OUU +	rack travel mm : 0.85
Rack travel in mm: 0.50	Tolerance mm : + 0.55
Tolerance mm : + 0.20	Rated speed rpm : 850
governor spring +	
pre-tension +	Rated speed rpm : 752
click setting x : 2.50	rack travel mm : 14.60
	Rated speed rpm : 790
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance 1/min : +- 4

rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm rack travel mm	
Rated speed rpm	: 791
Tolerance 1/min	: ← 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
Rated speed rpm	: 754
rack travel mm	: 14.60
Rated speed rpm	: 792
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	
Rated speed rpm	: 755
rack travel mm	: 14.60
Rated speed rpm	: 793
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: +- 0.55
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.65 : +- 0.05
ANEROID/ALTITUDE	

Rated speed rpm	:	500
Pressure hPa	:	_
rack travel mm	:	13.50
Tolerance mm	: +-	0.20

## **MEASUREMENT**

Rated speed rpm	:	500
Pressure hPa rack travel mm Tolerance mm	: +	240 14.00 - 0.20
Pressure hPa rack travel mm Tolerance mm	: : : +-	450 15.05 - 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		188.0
Tolerance			
cm3/1000 strokes	: •	-	1.0
Check tolerance			
cm3/1000s.	: -	-	4.0

End of test specification sheet

# COMPENSATOR TEST

## SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.65
Tolerance mm : + 0.05

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08, 10, 98 : ISO 4113

Combination No. : 0 402 076 801B

Injection pump

Pump designation : PES6P120A1320/5RS337

: 2Y

EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1388640

Customer-spec. information Customer : SCANIA

Motor

: DS11 99M

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C

Tolerance °C

: 40 : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

: 251.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm Prestroke mm 4.45
Tolerance mm : +- 0.05

4,45

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order

: 1-5-3-6-2

: - 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.30

Check

tolerance °NW

: +- 0.75

## Start of delivery mark

Tolerance

: +- 0.10

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm :

700

1	
Rack travel in mm: 15.55 Tolerance mm: + 0.05	Rated speed rpm : 700 Aneroid pressure
Dol quantity	hPa : 1500
Del. quantity cm3/1000 strokes : 238.0	Del. quantity cm3/1000 strokes : 238.0 Tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
	cm $3/1000$ s. : $\leftarrow$ 7.0
Check tolerance cm3/1000s. : +- 7.0	Spreed Tolerance cm3/1000 strokes : 8.0
Spreed	Check tolerance
Tolerance cm3/1000 strokes : 8.0	cm3/1000s. : 12.0
Check tolerance cm3/1000S. : 12.0	CONTROL LEVER
	control lever
+	position degree : 34.0
Ţ	tolerance degree : +- 4.0
Rack travel in mm: 6.00	control lever
Tolerance mm : + 0.20 + Del. quantity +	position degree : 84.0 tolerance degree : +- 4.0
cm3/1000 strokes : 20.0	toterance degree : +- 4.0
Tolerance + 4.0	ASSEMBLY GOVERNOR SETTING
Check tolerance	Dated aread may 750
cm3/1000S. : +- 6.0 +- Spreed	Rated speed rpm : 750 rack travel mm : 14.50
Tolerance	THE THE THE THE THE THE THE THE THE THE
cm3/1000 strokes : 5.0	Rated speed rpm : 788
Check tolerance	Tolerance 1/min : +- 4
cm3/1000s. : 9.0	rack travel mm : 4.00
	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP	Tolerance mm : ← 0.55
WITH GOVERNOR	Rated speed rpm : 850
	Dated aread are 254
GUIDE SLEEVE POSITION	Rated speed rpm : 751 rack travel mm : 14.50
†	Dated speed non . 700
control lever	Rated speed rpm : 789 Tolerance 1/min : +- 4
position degree : -3	rack travel mm : 4.00
Rated speed rpm : 800	
Rack travel in mm: 0.50	rack travel mm : 0.85
Tolerance mm : + 0.20	Tolerance mm : +- 0.55 Rated speed rpm : 850
	Taron opeco (pill Cook)
governor spring +	
pre-tension + click setting x : 2.50 +	Rated speed rpm : 752 rack travel mm : 14.50
click setting x : 2.50	rack travet mm : (4.50
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 790 Tolerance 1/min : ÷- 4
TOLL LOAD DECEMENT AT TOLL LOAD STOP	TOTE CALLE TAIRED . TO 4

rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 850
Rated speed rpm	: 753
rack travel mm	: 14.50
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: +- 0.55
Rated speed rpm	: 754
rack travel mm	: 14.50
Rated speed rpm	: 792
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 14.50
Rated speed rpm	: 793
Tolerance 1/min	: ← 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.55 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 13.50 : + 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 240 : 14.00 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 450 : 15.05 : ← 0.05
FUEL DELIVERY CHA	
FUEL DELIVERY CHA	ARACTERISTICS : -
FUEL DELIVERY CH/ Aneroid pressure hPa Rated speed rpm	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	ARACTERISTICS : -
FUEL DELIVERY CH/ Aneroid pressure hPa Rated speed rpm Del. quantity	RACTERISTICS : - : 500

End of test specification sheet

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.55
Tolerance mm : + 0.05

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 402 076 8010

Injection pump

Pump designation : PES6P120A1320/5RS337

: 2Y EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1397107

Customer-spec. information

Customer : SCANIA

Motor

: DSI1180M,-81M

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C

Tolerance °C :  $\leftarrow$  2.0

40

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : + 0.1

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar

251.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

: 1-5-3-6-2 Firing order

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance °NW : + - 0.75

Start of delivery mark

Tolerance

: + 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

	1		
Rack travel in mm Tolerance mm	: 15.85 : +- 0.05	Rated speed rpm Aneroid pressure	
		hPa	: 1500
Del. quantity cm3/1000 strokes	: 240.0	Del. quantity cm3/1000 strokes	: 240.0
Tolerance cm3/1000 strokes	: +- 1.0	Tolerance cm3/1000 strokes Check tolerance	: +- 1.0
Check tolerance	+	cm3/1000s. Spreed	: +- 7.0
	: +- 7.0	Tolerance cm3/1000 strokes	: 8.0
Spreed	İ	Check tolerance cm3/1000s.	: 12.0
Tolerance cm3/1000 strokes :	: 8.0		. (2.0
Check tolerance cm3/1000s.	: 12.0	CONTROL LEVER	
		control lever	
	+	position degree	
	İ	tolerance degree	: <b>←</b> 4.0
Rack travel in mm :	: 6.00 I	control lever	
	+ 0.20	position degree	: 84.0
Del. quantity	+	tolerance degree	
cm3/1000 strokes :	20.0		
Tolerance	+		
cm3/1000 strokes : Check tolerance	+ 4.0	ASSEMBLY GOVERNOR	SETTING
	+- 6.0	Dated around arm	: 750
Spreed	T 0.0	Rated speed rpm rack travel mm	
Tolerance	I	rack travet min	. 14.80
cm3/1000 strokes :	5.0	Rated speed rpm	: 788
Check tolerance	1	Tolerance 1/min	
cm3/1000s. :	9.0	rack travel mm	: 4.00
	+		
	+	rack travel mm	: 0.85
(B) SETTING OF INJE	CTION PUMP +	Tolerance mm	: +- 0.55
WITH GOVERNOR	†	Rated speed rpm	: 850
	Ť		
	I	Rated speed rpm	: 751
GUIDE SLEEVE POSITI	ON I	rack travel mm	: 14.80
	<u> </u>		
	<del> </del>	Rated speed rpm	: 789
control lever	+	Tolerance 1/min	: +- 4
position degree :	-3 +	rack travel mm	: 4.00
Rated speed rpm :	800 +		
	+	rack travel mm	: 0.85
Rack travel in mm :		Tolerance mm	: +- 0.55
Tolerance mm :	+ 0.20	Rated speed rpm	: 850
governor spring	Ī		
pre-tension	I	Rated speed rpm	: 752
click setting x :	2.50	rack travel mm	: 14.80
orion december.		TWON CI WICC IIIII	. 14.00
		Rated speed rpm	: 790
FULL LOAD DELIVERY	AT FULL LOAD STOP	Tolerance 1/min	: +- 4

rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.55
Rated speed rpm rack travel mm	: 753 : 14.80
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 850
Rated speed rpm rack travel mm	: 754 : 14.80
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 850
Rated speed rpm rack travel mm	: 755 : 14.80
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 850
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.85 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	

Rated speed rpm	:	500
Pressure hPa	:	_
rack travel mm	:	13.50
Tolerance mm	: +	- 0.20

## MEASUREMENT

Rated speed rpm	:	500
Pressure hPa	:	240
rack travel mm	:	14.00
Tolerance mm	: +-	0.20
Pressure hPa	:	450
rack travel mm	:	15.05
Tolerance mm	: +-	0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		188.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0

End of test specification sheet

## SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.85
Tolerance mm : + 0.05

### Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 08.10.98 Test oil : ISO 4113

Combination No. : 0 402 076 802A

Injection pump

Pump designation : PES6P120A1320/5RS337

: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1388635

Customer—spec. information Customer : SCANIA

Motor : DS11 94A, -95A

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

	1		
Rack travel in mm	: 14.55		
	: +- 0.05	FULL LOAD DELIVERY A	T FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 209.0	Rated speed rpm : Aneroid pressure	700
Tolerance	<del></del>	hPa : Del. quantity	1500
cm3/1000 strokes	: + 1.0	cm3/1000 strokes : Tolerance	209.0
Check tolerance cm3/1000s.	: +- 6.0	Check tolerance	+- 1.0
Spreed		Spreed	<b>←</b> 6.0
Tolerance cm3/1000 strokes	: 8.0	Tolerance cm3/1000 strokes : Check tolerance	8.0
Check tolerance		cm3/1000s. :	12.0
	: 12.0		
	+	CONTROL LEVER	
Rated speed rpm	+	control lever position degree :	54.0
	: 5.10 : + 0.10	tolerance degree :	<b>-</b> 4.0
	: 18.0	control lever position degree :	104.0
Tolerance cm3/1000 strokes Check tolerance	: + 3.0	tolerance degree :	<b></b> 4.0
	: ← 6.0	RATED SPEED rack travel mm : Rated speed rpm :	13. <i>5</i> 0 1095
Tolerance cm3/1000 strokes :	: 4.0		⊢ 5
Check tolerance	: 8.0	speed 1/min :	<b>⊢</b> 10
	1	rack travel mm : Rated speed rpm :	4.00 1190
(B) SETTING OF INJE	ECTION PUMP	Tolerance 1/min : d	15
	‡		- 20
GUIDE SLEEVE POSITI	TON	rack travel mm : Tolerance mm : +	0.85
GOIDE SEEEVE POSITI		Rated speed rpm :	
control lever	T		4.00
	800	Rated speed rpm : Tolerance 1/min : + Check	1210 - 15
Rack travel in mm : Tolerance mm :			<b>–</b> 20
governor spring pre-tension	<b>‡</b>		
click setting x :	5.50	LOW IDLE	

control lever

position degree : 73.0 tolerance degree : + 4.0

control lever

position degree : 23.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 4.60 Tolerance mm :  $\leftarrow 0.10$ 

Testing:

Rated speed rpm : 350 rack travel mm : 5.10 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 14.55 Tolerance mm : + 0.05

Rated speed rpm : 1050 rack travel mm : 14.55 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 12.00
Tolerance mm : + 0.20

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 410 rack travel mm : 12.60 Tolerance mm : + 0.20

Pressure hPa : 670 rack travel mm : 13.95 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 1050

Del. quantity

cm3/1000 strokes : 197.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  4.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed Tolerance

10terance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 08.10.98 taition : U8.10.98
Test oil : ISO 4113

Combination No. : 0 402 076 802B

Injection pump

Pump designation : PES6P120A1320/5RS337

: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1388636

Customer-spec. information

Customer : SCANIA

Motor

: DS1198M,DSI1179M

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C

40 temp. °C : 40Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde assembly

: 1 688 901 104

Opening pressure

bar

251.5

Tolerance bar : + 1.5

x length mm : 600

x inside diameter :

Outside diameter : 6.0

Test lines : 1 680 750 008

2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ← 1.0

Prestroke mm Tolerance mm : **←** 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

: **←** 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : **←** 0.30

Check

tolerance "NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

J16

Paul Assural Street 45 25	
Rack travel in mm: 15.25 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 225.0	Rated speed rpm : 700 Aneroid pressure
Tolerance	hPa : 1500 Del. quantity cm3/1000 strokes : 225.0
Check tolerance cm3/1000s. : + 7.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : +- 7.0 Spreed
Tolerance cm3/1000 strokes : 8.0	Tolerance cm3/1000 strokes : 8.0 Check tolerance
Check tolerance cm3/1000s. : 12.0	cm3/1000s. : 12.0
<u> </u>	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 49.0
Rack travel in mm: 5.10 Tolerance mm: + 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 18.0 + Tolerance +	control lever  position degree : 99.0  tolerance degree : +- 4.0
cm3/1000 strokes : + 3.0 + Check tolerance +	RATED SPEED
cm3/1000S. : + 6.0 + Spreed + Tolerance +	rack travel mm : 14.20 Rated speed rpm : 945 Tolerance 1/min : +- 5
cm3/1000 strokes : 4.0 + Check tolerance +	Check speed 1/min : +- 10
cm3/1000s. : 8.0	rack travel mm : 4.00 Rated speed rpm : 1045
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance 1/min : +- 15 Check
<u></u>	speed 1/min : +- 20
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1200
control lever position degree : -3 Rated speed rpm : 800	rack travel mm : 4.00 Rated speed rpm : 1065 Tolerance 1/min : +- 15
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Check speed 1/min : +- 20
governor spring + pre-tension +	<del></del>
click setting x : 5.00	LOW Time

J17

control lever position degree tolerance degree	: 73.0 : + 4.0	
control lever position degree tolerance degree	: 23.0 : + 4.0	
Setting point w/out bumper spring		
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.60 : + 0.10	
Testing:		
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : +- 0.10	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.25 : ← 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 900 : 15.25 : ← 0.10	
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 15.25 : + 0.05	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 13.10 : ← 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 450 : 13.60 : ← 0.20	
Pressure hPa rack travel mm Tolerance mm	: 660 : 14.65 : + 0.05	

FUEL DELIVERY CHARACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 900 : 216.0 : + 4.0 : ← 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 183.0 : + 1.0 : + 5.0	
LOW IDLE		
Rated speed rpm	: 350	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 5.10 : + 0.10 : 18.0 : + 3.0 : + 6.0 : 4.0	
cm3/1000s.	: 8.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 402 076 8020

Injection pump

Pump designation: PES6P120A1320/5RS337

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1388637

Customer—spec. information Customer : SCANIA

: DSI11 73M,-78M Motor

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 4.45 Tolerance mm : → 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : **←** 0.30

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

	1
Rack travel in mm : 15.35	I
Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 226.0	Rated speed rpm : 700 Aneroid pressure
Tolerance	+ hPa : 1500 + Del. quantity
cm3/1000 strokes : + 1.0	- cm3/1000 strokes : 226.0 - Tolerance
Check tolerance cm3/1000s. : + 7.0	cm3/1000 strokes : + 1.0 Check tolerance
Spreed	cm3/1000s. : + 7.0 + Spreed
	+ Tolerance
Tolerance	+ cm3/1000 strokes : 8.0
cm3/1000 strokes : 8.0	+ Check tolerance + cm3/1000s. : 12.0
Check tolerance cm3/1000s. : 12.0	1
CHD7 10003 12.0	
	CONTROL LEVER
Rated speed rpm : 350	control lever
	position degree : 54.0
Rack travel in mm: 5.10	tolerance degree : +- 4.0
Tolerance mm : + 0.10	†
Del. quantity	control lever
cm3/1000 strokes : 18.0	position degree : 104.0
Tolerance - 7.0	tolerance degree : +- 4.0
cm3/1000 strokes : + 3.0 - Check tolerance	BATER SPEED
cm3/1000s. : +- 6.0	+ RATED SPEED + rack travel mm : 14.30
Spreed -	Rated speed rpm : 1095
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : 4.0	Check
Check tolerance	speed 1/min : + 10
cm3/1000s. : 8.0	-
-	rack travel mm : 4.00
-	Rated speed rpm : 1195
(B) SETTING OF INJECTION PUMP -	Tolerance 1/min : + 15
WITH GOVERNOR	Check
	├ speed 1/min : + 20
	rack travel mm · 0.85
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : + 0.55
GOIDE SEELVE FOSTITON	Rated speed rpm : 1350
-	Hacea Speed (piii . 1550
control lever	rack travel mm : 4.00
position degree : - 3	Rated speed rpm : 1225
Rated speed rpm : 800 -	Tolerance 1/min : +- 15
	Check
Rack travel in mm : 0.50 - Tolerance mm : +- 0.20 -	speed 1/min : +- 20
<del>.</del>	<del> </del>
governor spring	<u> </u>
pre-tension -	LOUTINE
click setting $x : 5.75$	LOW IDLE

control lever position degree tolerance degree	: 73.0 : +- 4.0	
control lever position degree tolerance degree	: 23.0 : + 4.0	
Setting point w/out bumper spring		
Rated sp <del>ee</del> d rpm rack travel mm Tolerance mm	: 350 : 4.60 : ← 0.10	
Testing:		
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : +- 0.10	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.35 : +- 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 15.35 : ← 0.10	
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 15.35 : +- 0.05	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 13.10 : + 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 450 : 13.60 : + 0.20	

Aneroid pressure hPa Rated speed rpm	: 1500 : 1050
Del. quantity cm3/1000 strokes Tolerance	: 209.0
cm3/1000 strokes Check tolerance	: <b>←</b> 4.0
cm3/1000s.	: +- 6.0
Aneroid pressure hPa	· _
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 183.0
cm3/1000 strokes Check tolerance	: ← 1.0
cm3/1000s.	: +- 5.0
	, , , , , , , , , , , , , , , , , , ,
LOW IDLE	
LOW IDLE	: 350
LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm	: 350
LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: 350 : 5.10 : + 0.10
LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 350 : 5.10 : + 0.10
LOW IDLE  Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.	: 350 : 5.10 : + 0.10 : 18.0
LOW IDLE Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 350 : 5.10 : + 0.10 : 18.0 : + 3.0

Pressure hPa : 660 rack travel mm : 14.65 Tolerance mm : + 0.05

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.10.98 Edition Test oil : ISO 4113

Combination No. : 0 402 076 8020

Injection pump

Pump designation : PES6P120A1320/5RS337

: 3 EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1359594

Customer-spec. information Customer : SCANIA : DSI11 71A Motor

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0 temp. °C 40

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

Barrel no. : 1

## BASIC SETTING

1	
Rack travel in mm: 15.15	
Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	Rated speed rpm : 700
cm3/1000 strokes : 221.0	Aneroid pressure
Siles rough actioneds . Zz	hPa : 1500
Tolerance	Del. quantity
cm3/1000 strokes : + 1.0	cm3/1000 strokes : 221.0
+	Tolerance
Check tolerance	$cm3/1000$ strokes : $\leftarrow$ 1.0
cm3/1000s. : +- 7.0	Check tolerance
Consider the second that the second the seco	cm3/1000s. : + 7.0
Spreed	Spreed Tolerance
Tolerance	cm3/1000 strokes : 8.0
cm3/1000 strokes : 8.0	Check tolerance
5.10.7 1000 St. 101.00	cm3/1000s. : 12.0
Check tolerance	
cm3/1000s. : 12.0 +	
<u>†</u>	CONTROL LEVER
Rated speed rpm : 350	control lever
Marca Speca (pri)	position degree : 54.0
Rack travel in mm: 5.10	tolerance degree : +- 4.0
Tolerance mm : + 0.10	
Del. quantity +	control lever
cm3/1000 strokes : 18.0 +	position degree : 104.0
Tolerance	tolerance degree : +- 4.0
cm3/1000 strokes : + 3.0 + Check tolerance	RATED SPEED
cm3/1000s. : +- 6.0	rack travel mm : 13.10
Spreed	Rated speed rpm : 1095
Tolerance	Tolerance 1/min : + 5
cm3/1000 strokes : 4.0 +	Check
Check tolerance	speed 1/min : +- 10
cm3/1000s. : 8.0 +	
†	rack travel mm : 4.00 Rated speed rpm : 1185
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1185 Tolerance 1/min : +- 15
WITH GOVERNOR	Check
	speed 1/min : +- 20
+	•
+	rack travel mm : 0.85
GUIDE SLEEVE POSITION +	Tolerance mm : ← 0.55
†	Rated speed rpm : 1350
control lever	rack travel mm · / AO
position degree : - 3	rack travel mm : 4.00 Rated speed rpm : 1205
Rated speed rpm : 800	Tolerance 1/min : +- 15
+	Check
Rack travel in mm: 0.50	speed 1/min : +- 20
Tolerance mm : + 0.20 +	
+	
governor spring	
pre-tension + click setting x : 6.00 +	LOW IDLE
T	EAM TAFF

control lever position degree : 73.0 tolerance degree : + 4.0 control lever position degree : 23.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 4.60 Tolerance mm : + 0.10 Testing: Rated speed rpm : 350 rack travel mm : 5.10 : +- 0.10 Tolerance mm TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 15.15 Tolerance mm :  $\leftarrow$  0.05 Rated speed rpm : 1050 rack travel mm : 14,15 Tolerance mm : +- 0.05 Rated speed rpm : 925 rack travel mm : 14.60 Tolerance mm : + 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm : Pressure hPa : 1500 rack travel mm : 15.15 Tolerance mm : + 0.05 Rated speed rpm : 500 : Pressure hPa 12.10 rack travel mm : Tolerance mm : +- 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa : 510 rack travel mm : 13.10 Tolerance mm : + 0.20

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 189.0
Tolerance
cm3/1000 strokes : +4.0
Check tolerance
cm3/1000s. : +6.0

Aneroid pressure
hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 4.0

## LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 5.10 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.10.98 Edition : ISO 4113 Test oil

Combination No. : 0 402 076 811A

Injection pump

Pump designation : PES6P120A1320/5RS338

: 0 EP type number : 0 412 026 800

Governor

Governer design. : RSV350...1100P8A664

Governer no. : 0 421 833 584

Cust. part No. : 1393866

Customer-spec. information Customer : SCANIA

: DS(I,C)9...A/M Motor

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

## REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 1

## BASIC SETTING

<del></del> †	Aneroid pressure
Rack travel in mm: 13.85	hPa : 1500 Del. quantity
Tolerance mm : +- 0.05 +	cm3/1000 strokes : 196.0 Tolerance
Del. quantity - cm3/1000 strokes : 196.0 -	cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance	cm3/1000s. : +- 6.0 Spreed
cm3/1000 strokes : + 1.0	Tolerance cm3/1000 strokes : 8.0
Check tolerance cm3/1000s. : + 6.0	Check tolerance cm3/1000s. : 12.0
Spreed	
Tolerance cm3/1000 strokes : 8.0	RATED SPEED rack travel mm : 12.80 Rated speed rpm : 1145 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : 12.0	Check speed 1/min : +- 10
	•
Ţ	Check speed 1/min : +- 20
Rated speed rpm : 350	rack travel mm : 0.85
Rack travel in mm: 5.20	Tolerance mm : +- 0.55
Tolerance mm : + 0.10 + Del. quantity +	Rated speed rpm : 1400
cm3/1000 strokes : 20.0	rack travel mm : 4.00
Tolerance + 3.0 + 4	Rated speed rpm : 1250
cm3/1000 strokes : + 3.0 + Check tolerance	Tolerance 1/min : +- 15 Check
cm3/1000s. : +- 6.0 Spreed	speed 1/min : + 20
Tolerance cm3/1000 strokes : 4.0	
Check tolerance	
cm3/1000s. : 8.0	LOW IDLE
(B) SETTING OF INJECTION PUMP	Setting point w/out bumper spring
WITH GOVERNOR	Rated speed rpm : 350
†	rack travel mm : 4.70
	Tolerance mm : ← 0.10
GUIDE SLEEVE POSITION	Testing:
Į.	Rated speed rpm : 350
control lever + position degree : - 3	rack travel mm : 5.20
+	Tolerance mm : + 0.10
governor spring + pre-tension +	TORQUE CONTROL
click setting x : 6.00	Rated speed rpm : 700
+	rack travel mm : 13.85
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.05
Rated speed rpm : 700	Rated speed rpm : 1100 rack travel mm : 13.85

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500 Pressure hPa 1500 rack travel mm : 13.85 Tolerance mm : **←** 0.05

Rated speed rpm 500 Pressure hPa rack travel mm 10.70 : ← 0.20 Tolerance mm

## **MEASUREMENT**

: 500 Rated speed rpm

300 Pressure hPa 11.60 rack travel mm : +- 0.20 Tolerance mm

540 Pressure hPa 13.05 rack travel mm Tolerance mm : +- 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 hPa 1100 Rated speed rpm Del. quantity

cm3/1000 strokes : 186.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : <del>←</del> 6.0

## Aneroid pressure

hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 114.0 Tolerance 1.0

cm3/1000 strokes : +-Check tolerance

cm3/1000s. : +-4.0

## LOW IDLE

Rated speed rpm : 350 Rack travel in mm : 5.20 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 402 076 811B

Injection pump

Pump designation : PES6P120A1320/5RS338

: 0

EP type number : 0 412 026 800

Governor

Governer design. : RSV350...1100P8A664

Governer no. : 0 421 833 584

Cust. part No. : 1403477 (Version B)

Customer-spec. information Customer : SCANIA

Motor

: DSI9 51A

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 1 417 413 325

Inlet press. bar :

Tolerance bar : +- 0.1

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

251.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Cutside diameter : 6.0

x inside diameter :

2.0

x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm 4.45 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm: 12.35 Tolerance mm: + 0.05  Tolerance cm3/1000 strokes: + 1.0  Check tolerance cm3/1000s: + 4.0  Spreed  Tolerance cm3/1000 strokes: 8.0	Aneroid pressure hPa : 1500 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Check tolerance cm3/1000s. : 12.0	control lever  control lever  position degree : 59.0  tolerance degree : +- 4.0
Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0	control lever position degree : 109.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.30 Rated speed rpm : 1145 Tolerance 1/min : + 5 Check speed 1/min : + 10  rack travel mm : 4.00 Rated speed rpm : 1245 Tolerance 1/min : + 15 Check speed 1/min : + 20  rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1350
GUIDE SLEEVE POSITION -	
control lever position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 6.00	control lever position degree : 77.0 tolerance degree : + 4.0  control lever position degree : 27.0 tolerance degree : + 4.0  Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700	Rated speed rpm : 350 - rack travel mm : 4.70 - Tolerance mm : +- 0.10

Te	es	t	i	ng	:
٠,		•	٠		•

Rated speed rpm : 350 rack travel mm : 5.20 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 12.35 Tolerance mm : + 0.05

Rated speed rpm : 1100 rack travel mm : 12.35 Tolerance mm : ± 0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500 : 1500 Pressure hPa rack travel mm : 12.35 Tolerance mm :  $\leftarrow$  0.05

Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.70

Tolerance mm : + 0.20

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 230 rack travel mm : 11.15 : +- 0.15 Tolerance mm

Pressure hPa : 310 rack travel mm : 11.65 : ← 0.05 Tolerance mm

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 hPa Rated speed rpm : 1100

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 6.0 Aneroid pressure

Rated speed rom : 500

Del. quantity

cm3/1000 strokes : 114.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 4.0

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 20.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.10.98 Test oil : ISO 4113

Combination No. : 9 402 076 812A

Injection pump

Pump designation : PES6P120A1320/5RS338

EP type number : 0 412 026 801

Governor

Governer design. : RSV350...1100P1A666

Governer no. : 0 421 833 585

Cust. part No. : 1393869

Customer-spec. information Customer : SCANIA

Motor

: DS9 50A

### TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

	1
Rack travel in mm : 16.35 Tolerance mm : + 0.05	Rated speed rpm : 700 Aneroid pressure
	+ hPa : 1500
Del. quantity cm3/1000 strokes : 217.0	Del. quantity + cm3/1000 strokes : 217.0 + Tolerance
Tolerance cm3/1000 strokes : ← 1.0	cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance	cm3/1000s. : +- 7.0 Spreed
cm3/1000s. : + 7.0	Tolerance cm3/1000 strokes : 8.0
Spreed	+ Check tolerance + cm3/1000s. : 12.0
Tolerance cm3/1000 strokes : 8.0	†
Check tolerance cm3/1000s. : 12.0	CONTROL LEVER
	control lever
	position degree : 34.0 tolerance degree : + 4.0
Rack travel in mm : 6.00	+ control lever
Tolerance mm : + 0.10	position degree : 84.0
Del. quantity cm3/1000 strokes : 20.0	tolerance degree : + 4.0
Tolerance cm3/1000 strokes : +- 4.0 Check tolerance	ASSEMBLY GOVERNOR SETTING
cm3/1000s. : +- 6.0 Spreed	Rated speed rpm : 750 rack travel mm : 15.30
Tolerance cm3/1000 strokes : 5.0	+ Rated speed rpm : 788
Check tolerance	+ Tolerance 1/min : + 4
cm3/1000s. : 9.0	rack travel mm : 4.00
	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP	+ Tolerance mm : + 0.55 + Rated speed rpm : 850
WITH GOVERNOR	T rated speed thin . 650
	Rated speed rpm : 751
GUIDE SLEEVE POSITION	rack travel mm : 15.30
	Rated speed rpm : 789
control lever	+ Tolerance 1/min : +- 4
position degree : -3 Rated speed rpm : 800	rack travel mm : 4.00
nated speed (Mill . OUD	rack travel mm : 0.85
Rack travel in mm : 0.50	+ Tolerance mm : +- 0.55
Tolerance mm : +- 0.20	Rated speed rpm : 850
governor spring	Ţ
pre-tension	Rated speed rpm : 752
click setting x : 2.25	rack travel mm : 15.30
	Rated speed rpm : 790
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance 1/min : +- 4

rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 850
Rated speed rpm rack travel mm	
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travet mm Tolerance mm Rated speed rpm	
Rated speed rpm rack travel mm	: 15.30
Rated speed rpm Tolerance 1/min rack travel mm	: 792 : +- 4 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: +- 0.55
Rated speed rpm rack travel mm	: 755 : 15.30
Rated speed rpm Tolerance 1/min rack travel mm	: 793 : +- 4 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 850
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 16.35 : +- 0.05

ANEROID/ALT	TUDE
COMPENSATOR	<b>TEST</b>

### SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.35
Tolerance mm : + 0.05

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	12.00
Tolerance mm	: +	- 0.20

### **MEASUREMENT**

Rated speed rpm	:	500
Pressure hPa	:	340
rack travel mm	:	13.10
Tolerance mm	: +	- 0.20
Pressure hPa	:	740
rack travel mm	:	15.25
Tolerance mm	: +	- 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		157.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.		+-	5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.10.98 : ISO 4113

Combination No. : 0 402 076 822

Injection pump

Pump designation : PES6P110A320RS3400

EP type number : 0 412 016 759

Governor

Governer design. : RSV300...1000P1A695

Governer no. : 0 421 833 618

Cust. part No. : 11032943 v. 25.02.98

Customer-spec. information : VCE

Customer

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

· + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 150 Tolerance l/h : +- 20.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm :

600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05

Check

tolerance mm : ⊱ 0.10

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Tolerance

: **←** 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm :

700

Rack travel in mm : 13.30

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes	: 131.0	Del. quantity cm3/1000 strokes : 131.0 Tolerance
Tolerance cm3/1000 strokes	: + 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance	·	cm3/1000S. : +- 4.0 Spreed
cm3/1000s.	: + 4.0	Tolerance cm3/1000 strokes : 5.0
Spreed	‡	Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes	: 5.0	
Check tolerance cm3/1000s.	: 9.0	CONTROL LEVER
	<del></del>	control lever
	<u> </u>	position degree : 106.0 tolerance degree : + 4.0
Rated speed rpm	: 300	toterance degree . +- 4.0
mayou opoou rp	+	RATED SPEED
Rack travel in mm		rack travel mm : 12.30
Tolerance mm	: <b>←</b> 0.10 <b>+</b>	Rated speed rpm : 1022
Del. quantity cm3/1000 strokes	: 49.0	Tolerance 1/min : +- 5
Tolerance	. 47.0	rack travel mm : 4.00
cm3/1000 strokes	: +- 2.0	Rated speed rpm : 1075
Check tolerance	_ +	Tolerance 1/min : +- 10
cm3/1000s.	: <b>←</b> 5.0 +	0.05
Spreed Tolerance	1	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000 strokes	: 7.0	Rated speed rpm : 1150
Check tolerance	+	Massa speed vp
cm3/1000s.	: 11.0	
	†	
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	LOW IDLE
	Ī	control lever
	<del></del> +	position degree : 77.0
GUIDE SLEEVE POSIT	ION	tolerance degree : +- 4.0
control lever	+	Testing:
position degree	: - 3	Rated speed rpm : 300
Rated speed rpm	•	rack travel mm : 9.00
•	+	Tolerance mm : +- 0.10
Rack travel in mm	: 0.50	rack travel mm : 2.00
governor spring	<del>†</del>	Rated speed rpm : 370
pre-tension	, <u>, , , , , , , , , , , , , , , , , , </u>	Tolerance 1/min : +- 30
click setting x	: 4.25	SET IDLE AUXILIARY SPRING
	+	
FULL LOAD DELIVERY	AT FULL LOAD STOP	rack travel mm : 2.00
	: 700	Tolerance mm : +- 2.00
Aneroid pressure hPa	: - ‡	TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 13.30 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700 Pressure hPa : 1500
rack travel mm : 13.30
Tolerance mm : + 0.05

Rated speed rpm : 700 Pressure hPa : rack travel mm : 10.90
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 700

Pressure hPa : 660 rack travel mm : 2.00 Tolerance mm : ← 0.20

Pressure hPa : 110 rack travel mm : 0.25 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s : +- 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 9.00 Tolerance mm : ← 0.10 Del. quantity

cm3/1000 strokes : 49.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 11.0

End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.03.98 Edition rest oil : 17.03.98

Combination No. : 0 402 086 702

Injection pump

Pump designation : PES6P100B321RS3388 EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A674 Governer no. : 0 421 833 592

Cust. part No. : 51.11103-7564

Customer-spec. information

Customer : MAN

Motor : D0826 LE531 Power KW : 191.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 13.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

	-
Rack travel in mm : 14.10  Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 174.0	Rated spead rpm : 925 Aneroid pressure
Tolerance 100	hPa : 1500 Del. quantity
cm3/1000 strokes : + 1.0  Check tolerance	cm3/1000 strokes : 174.0  Tolerance  cm3/1000 strokes : +- 1.0
cm3/1000s. : + 4.0	Check tolerance cm3/1000s. : +- 4.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance
Check tolerance cm3/1000S. : 6.0	cm3/1000s. : 6.0
+	CONTROL LEVER
Rated speed rpm : 400	control lever
<u> </u>	position degree : 104.0
Rack travel in mm: 4.90	tolerance degree : +- 4.0
Tolerance mm : + 0.10	DATES ABOUT
Del. quantity +	RATED SPEED
cm3/1000 strokes : 25.0	rack travel mm : 12.60
Tolerance +	Rated speed rpm : 1175
cm3/1000 strokes : +- 3.0 +	Tolerance 1/min : +- 5
Check tolerance	t - t
cm3/1000s. : +- 6.0	rack travel mm : 4.00
Spreed	Rated speed rpm : 1265
Tolerance 7.5	Tolerance 1/min : ← 15
cm3/1000 strokes : 3.5	mode Americal min
Check tolerance + cm3/1000s. : 5.5 +	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/10005. : 3.3 +	
Ť	Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR	Rated speed rpm : 1270
WITH COVERNOR	Tolerance 1/min : +- 15
1	Total and Trimiti
GUIDE SLEEVE POSITION +	
+	
+	LOW IDLE
control lever	
position degree : -3 +	
Rated speed rpm : 800 +	control lever
+	position degree : 80.0
Rack travel in mm: 0.50	tolerance degree : +- 4.0
Tolerance mm : + 0.20 +	
+	Setting point w/out bumper spring
governor spring +	0.4.1
pre-tension +	Rated speed rpm : 400
click setting x : 5.00	rack travel mm : 4.40 Tolerance mm : + 0.10
+	Tolerance mm : +- 0.10
<u> </u>	

### Testing:

Rated speed rpm : 400 rack travel mm : 4.90 : +- 0.10 Tolerance mm

rack travel mm : 2.00 Rated speed rpm : 500 Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 925 rack travel mm : 14.10 Tolerance mm : +- 0.05

Rated speed rpm : 1125 rack travel mm : 13.60 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 14.15 Tolerance mm : + 0.10

Rated speed rpm : 1025 rack travel mm : 13.95 Tolerance mm : + 0.10

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 14.10 Tolerance mm : + 0.15

Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.45 Tolerance mm : +- 0.15

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150 rack travel mm : 9.75 Tolerance mm : + 0.05

Pressure hPa : 800 rack travel mm : 13.05 Tolerance mm : + 0.15

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 Rated speed rpm : 1125 Del. quantity

cm3/1000 strokes : 161.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

: +- 6.0 cm3/1000s.

Aneroid pressure

: 1500 Rated speed rpm : 700 rack travel mm : 14.15 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 187.0

Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.45 Tolerance mm : + 0.45 Del. quantity

cm3/1000 strokes : 112.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.90 Tolerance mm :  $\leftarrow$  0.10

Del. quantity cm3/1000 strokes	:	25.0
Tolerance cm3/1000 strokes		3.0
Check tolerance	• •-	3.0
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.09.97 Test oil : ISO 4113

Combination No. : 0 402 086 703

Injection pump

Pump designation : PES6P100B321RS3388

EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A682

Governer no. : 0 421 833 603

Cust. part No. : 51.11103-7533

Customer—spec. information Customer : MAN

Motor : D0826 LE527

Power KW : 169.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : ← 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

	+
Rack travel in mm : 13.90 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 169.0	Rated speed rpm : 925 Aneroid pressure
Tolerance cm3/1000 strokes : + 1.0	hPa : 1500 Del. quantity cm3/1000 strokes : 169.0
Check tolerance cm3/1000s. : + 4.0	Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Spreed	cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 104.0
Rack travel in mm : 4.80 Tolerance mm : +- 0.10 Del. quantity	tolerance degree : +- 4.0  RATED SPEED
cm3/1000 strokes : 25.0 Tolerance	rack travel mm : 12.10 Rated speed rpm : 1175
cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0	+ Tolerance 1/min : + 5
Spreed Tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 1265 + Tolerance 1/min : + 15
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	rack travel mm : 0.85 Tolerance mm : +- 0.55
(D) OFFITAIO OF TALIFORTION DIME	Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	‡
	LOW IDLE
GUIDE SLEEVE POSITION	control lever
control lever position degree : - 3	position degree : 80.0 tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm : 400 rack travel mm : 4.30 Tolerance mm : + 0.10
governor spring pre-tension click setting x : 5.50	Testing:
	Rated speed rpm : 400 rack travel mm : 4.80

Tolerance mm	: <b>←</b> 0.10	+	- Rated speed rpm	:	1125
	2.00	+	- Del. quantity		
rack travel mm		†	- cm3/1000 strokes	:	146.5
Rated speed rpm Tolerance 1/min	: 500 : +- 30	1	Tolerance cm3/1000 strokes		7.0
Toterance Thirm	; 30	1	Check tolerance	: 1	- 3.0
	<del></del>	I	- cm3/1000s.	: +-	- 6.0
TORQUE CONTROL		1		• '	0.0
Rated speed rpm	: 925	4			
rack travel mm	: 13.90	+	- Aneroid pressure		
Tolerance mm	: <b>←</b> 0.05	+	- hPa		1500
		+	<ul> <li>Rated speed rpm</li> </ul>	:	700
Rated speed rpm rack travel mm Tolerance mm	: 1125	t	- rack travel mm	:	14.00
rack travel mm	: 13.10	†	- Tolerance mm	: +	- 0.10
Tolerance mm	: <b>←</b> 0.10	†	- Del. quantity		
	700	†	- cm3/1000 strokes	:	180.5
Rated speed rpm		†	- Tolerance		
rack travel mm	: 14.00	†	- cm3/1000 strokes	: +-	- 3.0
Tolefance mm	: <b>←</b> 0.10	†	- Check tolerance		
Datad aroad hair	. 1000	1	- cm3/1000s.	: +-	- 6.0
Rated speed poin	17.70	T			
rack travel mm Tolerance mm	: 13.70	Ī	- Aneroid pressure		
10to, ance min	. +- 0.10	I	- hPa		_
			- Rated speed rpm	•	500
ANEROID/ALTITUDE			- Del. quantity	•	200
COMPENSATOR TEST		1	- cm3/1000 strokes	•	90 U
		1	- Tolerance	•	70.0
		1	- cm3/1000 strokes	: +	- 1.0
SETTING		1	- Check tolerance	•	,,,
		1	- cm3/1000s.	: +-	- 4.0
Rated speed rpm	: 500 : 1500 : 14.00	+	•		
Pressure hPa	: 1500	+	•		
rack travel mm Tolerance mm	: 14.00	+			
Tolerance mm	: <b>←</b> 0.10	+	STARTING FUEL DEL	IVERY	<i>'</i>
	500	+			
Rated speed rpm	: 500	†	Rated speed rpm		100
Pressure hPa	9.50	†	rack travel mm		9.50
rack travel mm		†	Tolerance mm	: +-	- 0.20
Tolerance mm	: +- 0.20	1	Del. quantity		442 D
MEASUREMENT		I	cm3/1000 strokes Tolerance	•	112.0
TIENSON LITER I		I	cm3/1000 strokes	. +	- 10 0
Rated speed rpm	: 500	1	Check tolerance	• '-	10.0
nacca speca i pii	. 200	1	cm3/1000s.	. +-	- 14.0
Pressure hPa	: 150	1		• •	17.0
rack travel mm	: 150 : 10.00	1			
Tolerance mm	: +- 0.05	+			
		<del> </del>			
Pressure hPa		+	LOW IDLE		
rack travel mm		+			
Tolerance mm	: <b>←</b> 0.15	+	Rated speed rpm	:	400
		+			
		+	Rack travel in mm		
		+	Tolerance mm	: +-	0.10
FUEL DELIVERY CHA	RACTERISTICS	+	Del. quantity		25.2
		†	cm3/1000 strokes	:	25.0
Amana2si		†	Tolerance		7.0
Aneroid pressure	. 1500	†	cm3/1000 strokes	: +-	5.0
hPa	: 1500	+			

Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.08.98 Edition : ISO 4113 Test oil

Combination No. : 0 402 086 704

Injection pump

Pump designation : PES6P100B321RS3388 EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A699

Governer no. : 0 421 833 625

Cust. part No. : 51.11103-7607

Customer-spec. information Customer : MAN

Motor : D0826 LE531 Power KW : 191.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity min. l/h : 150 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance "NW : <del>+−</del> 0.75

Start of delivery blocking

: +- 0.10 Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rack travel in mm: 14.10	
Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 174.0	Rated speed rpm : 925 Aneroid pressure
Tolerance 1.0	hPa : 1500 Del. quantity
cm3/1000 strokes : + 1.0	cm3/1000 strokes : 174.0 Tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance
Check tolerance cm3/1000S. : 6.0	cm3/1000s. : 6.0
	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 104.0
Rack travel in mm: 4.90 Tolerance mm: + 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 25.0 + Tolerance	RATED SPEED rack travel mm : 12.60 Rated speed rpm : 1175
cm3/1000 strokes : + 3.0 Check tolerance	Tolerance 1/min : + 5
cm3/1000s. : + 6.0 + 5preed	rack travel mm : 4.00 Rated speed rpm : 1265
Tolerance cm3/1000 strokes : 3.5	Tolerance 1/min : + 15
Check tolerance cm3/1000s. : 5.5	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1270 Tolerance 1/min : + 15
GUIDE SLEEVE POSITION	
control lever	LOW IDLE
position degree : -3	control lever
Rated speed rpm : 800 + Rack travel in mm : 0.50 +	position degree : 80.0 tolerance degree : +- 4.0
Tolerance mm : +- 0.20	Setting point w/out bumper spring
governor spring pre-tension	Pated speed rpm . ADD
click setting x : 4.75	Rated speed rpm : 400 rack travel mm : 4.40 Tolerance mm : +- 0.10
+	

### Testing:

Rated speed rpm : 400 rack travel mm : 4.90 Tolerance mm :  $\leftarrow 0.10$ 

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 925 rack travel mm : 14.10 Tolerance mm : +- 0.05

Rated speed rpm : 1125 rack travel mm : 13.60 Tolerance mm : +--- 0.05

Rated speed rpm : 700 rack travel mm : 14.15 Tolerance mm :  $\leftarrow 0.10$ 

Rated speed rpm : 1025 rack travel mm : 13.95 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : + 0.15

Rated speed rpm : 500
Pressure hPa : rack travel mm : 9.45
Tolerance mm : +- 0.15

#### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 150 rack travel mm : 9.75 Tolerance mm : + 0.05

Pressure hPa : 800 rack travel mm : 13.05 Tolerance mm : + 0.15

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 1125

Del. quantity cm3/1000 strokes

cm3/1000 strokes : 161.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : + 0.10
Del. quantity

cm3/1000 strokes : 187.0

Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.45 Tolerance mm : + 0.45 Del. quantity

cm3/1000 strokes : 112.0 Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

#### LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.90 Tolerance mm : + 0.10

Del. quantity		
cm3/1000 strokes	:	25.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.08.98 Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump

Pump designation : PES6P100B321RS3388 EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A698

Governer no. : 0 421 833 624

Cust. part No. : 51.11103-7606

Customer—spec. information

Customer : MAN

: DO826 LE527 Motor

Power KW : 169.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. L/h : 150 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 13.50 Tolerance mm : + 0.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance  $^{\circ}NW$  : +- 0.75

Barrel no. : 1

### BASIC SETTING

5 - 4	
Rack travel in mm: 13.80 + Tolerance mm: + 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 166.0	Rated speed rpm : 925 Aneroid pressure
Tolerance	hPa : 1500 Del. quantity
cm3/1000 strokes : + 1.0	cm3/1000 strokes : 166.0 Tolerance
Check tolerance cm3/1000S. : + 4.0	cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000S. : +- 4.0 Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance
Charle Address -	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
	CONTROL LEVER
Rated speed rpm : 400	control lever
Rack travel in mm : 4.80	position degree : 101.0 tolerance degree : +- 4.0
Toterance mm : + 0.10	toterance degree : +- 4.0
Del. quantity	RATED SPEED
cm3/1000 strokes : 25.0	rack travel mm : 12.10
Tolerance +	Rated speed rpm : 1175
cm3/1000 strokes : + 3.0	Tolerance 1/min : +- 5
Check tolerance + 6.0 +	rack travel mm : 4.00
Spreed	Rated speed rpm : 1265
Tolerance	Tolerance 1/min : + 15
cm3/1000 strokes : 3.5	
Check tolerance	rack travel mm : 0.85
cm3/1000s. : 5.5	Tolerance mm : + 0.55
†	Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
+	
+	LOW IDLE
GUIDE SLEEVE POSITION	
1 J	control lever
1	position degree : 77.0
control lever	tolerance degree : +- 4.0
position degree : -3	
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50	Rated speed rpm : 400
Tolerance mm : +- 0.20	
+	rack travel mm : 4.30 Tolerance mm : +- 0.10
governor spring +	
pre-tension +	Testing:
click setting $x : 5.00$	Datad aroad area (100
‡	Rated speed rpm : 400 rack travel mm : 4.80
· ·	

Tolerance mm	: <b>←</b> 0.10	+ Rated speed rpm	: 1125
rack travel mm	: 2.00	+ Del. quantity + cm3/1000 strokes	. 11.6 5
Rated speed rpm	: 500	+ Tolerance	
Tolerance 1/min	: ← 30	+ cm3/1000 strokes	: +- 3.0
			: <b>←</b> 6.0
TORQUE CONTROL		1	0.0
Rated speed rpm			
rack travel mm Tolerance mm		+ Aneroid pressure + hPa	: 1500
		+ Rated speed rpm	: 700
Rated speed rpm	: 1125 : 13.10	rack travel mm	: 13.80
rack travel mm Tolerance mm	: +- 0.10	+ Tolerance mm + Del. quantity	: +- 0.10
		- cm3/1000 strokes	: 176.0
Rated speed rpm	: 700	+ Tolerance	
rack travel mm Tolerance mm	: + 0.10	+ cm3/1000 strokes + Check tolerance	
		+ cm3/1000s.	
Rated speed rpm	: 1000	+	
rack travel mm Tolerance mm	: +- 0.10	Aneroid pressure	
		+ hPa	: -
ANEDOTO (A) TITUDE		Rated speed rpm	: 500
ANEROID/ALTITUDE COMPENSATOR TEST		+ Del. quantity + cm3/1000 strokes	: 93.0
		+ Tolerance	
CETTAIC		+ cm3/1000 strokes	: <del>+</del> 1.0
SETTING		+ Check tolerance + cm3/1000s.	: + 4.0
Rated speed rpm	: 500	+	, , , , , ,
Pressure hPa	: 500 : 1500 : 13.80	†	
Pressure hPa rack travel mm Tolerance mm	: +- 0.10	T STARTING FUEL DEL	IVERY
		+	
Rated speed rpm Pressure hPa	: 500	+ Rated speed rpm + rack travel mm	
rack travel mm	: 9.70	+ Tolerance mm	
Tolerance mm	: ← 0.20	Del. quantity	
MEASUREMENT		+ cm3/1000 strokes + Tolerance	: 112.0
TENSORE: EITT		cm3/1000 strokes	: + 10.0
Rated speed rpm	: 500	+ Check tolerance	. 4/ 0
Pressure hPa	: 150	cm3/1000s.	: + 14.0
rack travel mm	: 150 : 10.00	+	
Tolerance mm	: ← 0.05	†	
Pressure hPa	: 800	LOW IDLE	
rack travel mm	: 13.20	+	
Tolerance mm	: ← 0.15	+ Rated speed rpm	: 400
		Rack travel in mm	: 4.80
		Tolerance mm	
FUEL DELIVERY CHA	RACTERISTICS	+ Del. quantity + cm3/1000 strokes	: 25.0
		+ CM3/1000 Strokes + Tolerance	. 25.0
Aneroid pressure		cm3/1000 strokes	: + 3.0
hPa	: 1500	+	

Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.06.97 : ISO 4113

Combination No. : 0 402 646 660

Injection pump

Pump designation : PE6P120A320RS7248

: -10V EP type number : 0 412 626 946

Governor

Governer design. : RQV275...1150PA986

Governer no. : 0 421 813 920

Cust. part No. : 1300727/1

Customer-spec. information

Customer : DAF Motor : RT 170 L

Power KW : 170.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet temp. °C

: 40

Tolerance °C

· + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 75
Tolerance l/h : + 10.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : ← 1.5

K25

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-: 4

Phasing : 0-60-120-180-240

: -300

Tolerance Check

: +- 0.50

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\vdash$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

0 1 - A 1 - 1	
Rack travel in mm : 10.60	Rated speed rpm : 309
Tolerance mm : +- 0.05	+ guide sleeve
Dol grantity	+ travel mm : 1.89 + Tolerance mm : + 0.25
Del. quantity cm3/1000 strokes : 146.0	+ Tolerance mm : + 0.25
51107 1000 Strokes . 140.0	Rated speed rpm : 359
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.41
Charle to language	+ Tolerance mm : + 0.25
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 450
the/ 10003:	guide sleeve
Spreed	travel mm : 2.99
	├ Tolerance mm : + 0.25
Tolerance	t Dated aread area 4500
cm3/1000 strokes : 5.0	Rated speed rpm : 1500 guide sleeve
Check tolerance	travel mm : 11.50
cm3/1000s. : 9.0	+ Tolerance mm : +- 0.50
Rated speed rpm : 275	GUIDE SLEEVE POSITION
Rated speed (pill . 21)	Ţ
Rack travel in mm : 4.70	control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity	+ Rated speed rpm : 1350
cm3/1000 strokes : 17.0	Doub Annual in a control of
Tolerance cm3/1000 strokes : +- 3.0	+ Rack travel in mm : 9.60 + Tolerance mm : +- 1.30
Check tolerance	Toterance min . T- 1.50
cm3/1000s. : + 6.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+
cm3/1000 strokes : 8.0	Rated speed rpm : 1000
Check tolerance	+ Aneroid pressure
	Aneroid pressure + hPa : 1000
Check tolerance cm3/1000S. : 12.0	+ Aneroid pressure
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure hPa: 1000 Del. quantity cm3/1000 strokes: 146.0 Tolerance
Check tolerance cm3/1000S. : 12.0	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 146.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance  cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 146.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0  Check tolerance
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve travel mm : 1.44	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER
Check tolerance cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve travel mm : 1.44 Tolerance mm : + 0.20	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve travel mm : 1.44 Tolerance mm : + 0.20  Rated speed rpm : 805	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve travel mm : 1.44 Tolerance mm : + 0.20  Rated speed rpm : 805 guide sleeve travel mm : 5.21	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : +- 1.0  Check tolerance cm3/1000s. : +- 4.0  Spreed Tolerance cm3/1000 strokes : 5.0  Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0
Check tolerance cm3/1000S. : 12.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1210 guide sleeve travel mm : 8.26 Tolerance mm : + 0.15  Rated speed rpm : 275 guide sleeve travel mm : 1.44 Tolerance mm : + 0.20  Rated speed rpm : 805 guide sleeve	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 146.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 118.0 tolerance degree : + 4.0

Rated speed rpm : 1200 Tolerance 1/min : + 5

rack travel mm : 4.00 Rated speed rpm : 1290 Tolerance 1/min : + 15

### LOW IDLE

control lever

position degree : 82.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275 rack travel mm : 4.70 Tolerance mm : +0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 10.60 Tolerance mm : + 0.05

Rated speed rpm : 1150 rack travel mm : 10.60 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 10.60
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : rack travel mm : 9.50

Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 600

Pressure hPa : 250 rack travel mm : 10.30 Tolerance mm : + 0.05

Pressure hPa : 190 rack travel mm : 9.80 Tolerance mm : + 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 122.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

### LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.70
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.08.98 Test oil : ISO 4113

Combination No. : 0 402 648 817

Injection pump

Pump designation : PE8P120A320LS7801

: -10

EP type number : 0 412 628 851

Governor

Governer design. : RQ300/1050PA762-16

Governer no. : 0 421 801 620

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : 0M442 A Power KW : 269.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2 x length mm : 1000 2.5

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  : + 0.75

Barrel no. : 8

### BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 14.05

Tolerance mm	: +- 0.05	<pre># guide sleeve # travel mm</pre>	: 6.20
Del. quantity cm3/1000 strokes	: 205.0	Tolerance mm	: + 0.10
Tolerance		Rated speed rpm guide sleeve	: 1170
cm3/1000 strokes	: <b>←</b> 1.0	travel mm Tolerance mm	: 11.50 : +- 0.50
Check tolerance cm3/1000s.	: +- 4.0		
Spreed		_	TION
Tolerance cm3/1000 strokes	: 5.0	control lever position degree Rated speed rpm	
Check tolerance cm3/1000s.	: 9.0	Rack travel in mm Tolerance mm	20.00 : + 0.80
Rated speed rpm	: 300	FULL LOAD DELIVER	Y AT FULL LO
Rack travel in mm Tolerance mm	: 6.20 : +- 0.10	Rated speed rpm Aneroid pressure	: 500
Del. quantity cm3/1000 strokes		+ hPa	: 1050
Tolerance		Del. quantity cm3/1000 strokes	: 205.0
cm3/1000 strokes Check tolerance		+ Tolerance + cm3/1000 strokes	: + 1.0
cm3/1000s. Spreed	: +- 6.0	theck tolerance cm3/1000s.	: + 4.0
Tolerance cm3/1000 strokes	: 6.0	+ Spreed + Tolerance	
Check tolerance cm3/1000S.	: 10.0	cm3/1000 strokes Check tolerance	
		+ cm3/1000s.	: 9.0
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	‡	
		+ CONTROL LEVER	
GUIDE SLEEVE TRAVE	EL	control lever position degree	: 97.0
Rated speed rpm guide sleeve	: 1110	tolerance degree	
travel mm Tolerance mm	: 7.10 : + 0.15	RATED SPEED rack travel mm	: 11.70
Rated speed rpm	: 300	Rated speed rpm Tolerance 1/min	: 1103
guide sleeve travel mm	: 2.00	rack travel mm	: 4.00
Tolerance mm	: + 0.20	Rated speed rpm Tolerance 1/min	: 1185
guide sleeve travel mm	: 6.00	rack travel mm	: 0.75
Tolerance mm	: + 0.10	Tolerance mm Rated speed rpm	: +- 0.75
Rated speed rpm	: 500	‡	2

: 1170 : 11.50 : + 0.50 ION 109 600 20.00 +- 0.80 AT FULL LOAD STOP 500 1050 205.0 + 1.0 +- 4.0 5.0 9.0 97.0 +- 4.0 11.70 1103 +- 8 4.00 1185 +- 15 0.75 +- 0.75 1300

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.20 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 400 : + 20
TORQUE CONTROL	
Dimension a mm Rated speed rpm rack travel mm Tolerance mm	: 0.75 : 500 : 14.05 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.80 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	

SETTING	
Rated speed rpm	: 600
Pressure hPa	: <del>-</del>
MEASUREMENT	
Pressure hPa	: 300
rack travel mm	: 1.00
Tolerance mm	: +- 0.10
Pressure hPa	: 400
rack travel mm	: 2.05
Tolerance mm	: + 0.15

Start	interlock
Start	IIII EI LUCK

Rated speed rpm Rated speed rpm	: >	100 220
Check speed 1/min Check	: >	80
speed 1/min	: <	240

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		40E0
hPa	:	1050
Rated speed rpm	:	1050
Del. quantity cm3/1000 strokes	:	179.5
Tolerance cm3/1000 strokes	: -	<del>⊢</del> 1.5
Check tolerance cm3/1000s.	: -	<del>⊢</del> 4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	7.0
cm3/1000S.	:	10.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		147.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000S.	:	+-	4.0
Spreed			
Tolerance			
cm3/1000 strokes	:		7.0
Check tolerance			
cm3/1000S.	:		10.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm3/1000 strokes	:	185.0
Tolerance		
cm3/1000 strokes	: +-	10.0
Check tolerance		
cm3/1000s.	: +-	14.0

LOW IDLE

Rated speed rpm	:	300
Rack travel in mm Tolerance mm	: : +-	6.20 0.10
	:	16.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000S. Spreed	: +-	6.0
Tolerance cm3/1000 strokes	:	6.0
Check tolerance cm3/1000s.	:	10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.08.96 : ISO 4113

Combination No. : 0 402 735 810

Injection pump

Pump designation : PES5P120A720/3LS7310

EP type number : 0 412 725 817

Governor

Governer design. : RQ325/1000PA1106-1

Governer no. : 0 421 801 700

Cust. part No. : 3-7324

Customer-spec. information

Customer : MAN

Motor

: D2865LUH06

Power KW

: 191.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

L04

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 12.80 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-3-5-4-2

Phasina : 0-72-144-216-288

: +- 0.50 Tolerance

Check

tolerance °NW

: +- 0.75

### Start of delivery mark

Tolerance : **←** 0.10

Check

tolerance °NW : <del>←</del> 0.75

Barrel no. : 5

### BASIC SETTING

Rated speed rpm :

550

Rack travel in mm : 10.80 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 235.0

Tolerance cm3/1000 strokes : +- 1.0	+ guide sleeve + travel mm : 4.50 + Tolerance mm : + 0.10
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 530 guide sleeve
Spreed	+ travel mm : 7.00 + Tolerance mm : + 0.10
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1220 guide sleeve
Check tolerance cm3/1000s. : 9.0	travel mm : 11.50 Tolerance mm : + 0.50
	GUIDE SLEEVE POSITION
Rated speed rpm : 325	‡
Rack travel in mm : 4.90 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 43.0	control lever position degree : 109 Rated speed rpm : 700
Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	Rack travel in mm : 15.50 Tolerance mm : +- 0.80
cm3/1000S. : +- 6.0 · · · · · · · · · · · · · · · · · · ·	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 8.0 - Check tolerance	Rated speed rpm : 550 Aneroid pressure
cm3/1000s. : 12.0	hPa : 750 Del. quantity
(B) SETTING OF INJECTION PUMP	cm3/1000 strokes : 235.0 Tolerance
WITH GOVERNOR -	cm3/1000 strokes : +- 1.0 Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
Rated speed rpm : 1071 - guide sleeve -	cm3/1000 strokes : 5.0 Check tolerance
travel mm : 7.35 - Tolerance mm : + 0.10 -	cm3/1000s. : 9.0
Rated speed rpm : 325 - guide sleeve -	CONTROL LEVER
travel mm : 2.50 Tolerance mm : +- 0.10	control lever
Rated speed rpm : 1000 - guide sleeve	position degree : 100.0 tolerance degree : +- 4.0
travel mm : 7.01 Tolerance mm : +- 0.10	RATED SPEED : 11.20
Rated speed rpm : 777	Rated speed rpm : 1053 Folerance 1/min : +- 8
travel mm : 7.01 - Tolerance mm : + 0.10 -	rack travel mm : 4.00 Rated speed rpm : 1130
Rated speed rpm : 408	- Tolerance 1/min : +- 15

rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.50
LOW IDLE	
control lever position degree tolerance degree	: 75.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 4.90 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 390
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 550 : 10.80 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.60 : ← 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 2000 : 12.20 : + 0.05

2-stage LDA setting  Rated speed rpm : 500 Pressure hPa : 750	m : 500 : - : 8.70 : + 0.10
Pressure hPa : 750	tting
rack travel mm : 10.80 MEASUREMENT	n : 500 : 750 : 10.80
Rated speed rpm : 500	n : 500
	: 300 : 9.00 : +- 0.05
	: 500 : 10.05 : + 0.15
	: 1000 : 11.05 : +- 0.10
Pressure hPa : 1250 rack travel mm : 11.65 Tolerance mm : +- 0.15	: 11.65

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm	: 2000 : 750
Del. quantity cm3/1000 strokes Tolerance	: 264.0
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s.	: ← 5.0

Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	 2000 1000 12.20 0.10 244.0 3.0 6.0

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 169.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : **←** 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.70 : **←** 0.20 Tolerance mm Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

: + 14.0 cm3/1000S.

### LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.90 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 43.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s.

: +-6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.10.98 : ISO 4113

Combination No. : 0 402 736 855

Injection pump

Pump designation : PES6P120A120RS7206

EP type number : 0 412 726 835

Governor

Governer design. : RQV350...1100PA924

: -9K

Governer no.

: D 421 815 425

Cust. part No. : 3282061

Customer-spec. information Customer : CUMMINS

Motor Power KW

: 6CTA : 190.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

L08

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

"NW after s.o.d. : 9.90 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.00

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes	: 156.0	† Tolerance mm	: +- 0.25
Tolerance		+ Rated speed rpm + guide sleeve	
cm3/1000 strokes Check tolerance	: +- 1.0	travel mm Tolerance mm	: 2.67 : +- 0.25
cm3/1000s.	: +- 4.0	Rated speed rpm	: 530
Spreed		travel mm Tolerance mm	: 3.46 : + 0.25
Tolerance cm3/1000 strokes	: 5.0	Rated speed rpm guide sleeve	: 1550
Check tolerance cm3/1000s.	: 9.0	travel mm Tolerance mm	: 13.50 : +- 0.50
	****	GUIDE SLEEVE POSI	TION
Rated speed rpm	: 350	T GOIDE SEEEVE FOST	1104
Rack travel in mm Tolerance mm		control lever position degree	
Del. quantity cm3/1000 strokes	: 20.5	Rated speed rpm	
Tolerance cm3/1000 strokes Check tolerance	: +- 3.0	Rack travel in mm Tolerance mm	
cm3/1000s. Spr <del>eed</del>	: +- 5.0	FULL LOAD DELIVER	Y AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: 7.0	Rated speed rpm	: 1100
Check tolerance cm3/1000s.	: 11.0	Aneroid pressure hPa Del. quantity	: -
(B) SETTING OF INJ	JECTION PUMP	cm3/1000 strokes Tolerance	
WITH GOVERNOR		cm3/1000 strokes Check tolerance	
GUIDE SLEEVE TRAVE	EL .	cm3/1000S. Spreed Tolerance	: +- 4.0
Rated speed rpm guide sleeve	: 1177	cm3/1000 strokes Check tolerance	: 5.0
travel mm Tolerance mm	: 8.80 ·· : +- 0.25	cm3/1000s.	: 9.0
Rated speed rpm guide sleeve	: 350	CONTROL LEVER	
travel mm	: 1.36 : +- 0.25	control lever	
	: 828 -	position degree tolerance degree	
guide sleeve travel mm Tolerance mm	: 5.95 - : +- 0.25 -		: 11.00
	: 399	Rated speed rpm Tolerance 1/min	: 1165
guide sleeve travel mm	: 1.98 -	rack travel mm	: 4.00
	'	,	

Rated speed rpm Tolerance 1/min		‡
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1400	† † † †
LOW IDLE		† †
control lever position degree tolerance degree		+ + +
Setting point w/o	out bumper spring	Ŧ
Rated speed rpm	: 200	‡
CRT mm min.	: > 6.70	‡
Testing:		‡
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.20 : + 0.10	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm	: 325	Ī
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.00 : + 0.05	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm rack travel mm Tolerance mm	: 750 : 10.90 : +- 0.10	† † † †
Rated speed rpm rack travel mm Tolerance mm	: 400 : 10.10 : +- 0.10	† † †
Rated speed rpm rack travel mm Tolerance mm	: 950 : 11.95 : + 0.10	† † † †
ANEROID/ALTITUDE COMPENSATOR TEST		+++++++++++++++++++++++++++++++++++++++
SETTING		‡
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1400 : 12.00 : ← 0.05	+++++++++++++++++++++++++++++++++++++++

Dated speed non	. 1100	
Rated speed rpm		
Pressure hPa	: -	
rack travel mm	: 8.50	
Tolerance mm	: +- 0.20	
MEASUREMENT		
Rated speed rpm	: 1100	
Pressure hPa	: 770	
rack travel mm	: 11.00	
Toterance mm	: + 0.05	
TOCCT GITTOC TIME	0.05	
Pressure hPa	: 530	
rack travel mm	9.40	
Tolerance mm	: ← 0.20	
	· · · · · · · · · · · · · · · · · · ·	
Start interlock		
Rated speed rpm	: > 100	
Rated speed rpm	: < 270	
	<del>_</del>	
Check		
speed 1/min	: > 80	
Check	. > 50	
COAAA III SA	• / 200	
speed 1/min  FUEL DELIVERY CHA	: < 290 RACTERISTICS	
FUEL DELIVERY CHA		
FUEL DELIVERY CHA		
FUEL DELIVERY CHA	RACTERISTICS	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	RACTERISTICS	
FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 750	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: - : 750	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 750 : 158.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: - : 750 : 158.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 750 : 158.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: - : 750 : 158.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 750 : 158.5 : + 3.0	
FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: - : 750 : 158.5 : + 3.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 750 : 750 : 158.5 : + 3.0 : + 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: - : 750 : 158.5 : + 3.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance	: 750 : 158.5 : + 3.0 : + 6.0 : 8.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 750 : 750 : 158.5 : + 3.0 : + 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance	: 750 : 158.5 : + 3.0 : + 6.0 : 8.0	
FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Check tolerance cm3/1000s.	: : 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
FUEL DELIVERY CHA  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Check tolerance cm3/1000s. Tack travel mm Tolerance mm	: : 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Check tolerance cm3/1000s. Check tolerance cm3/1000s. Aneroid pressure	: : 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm	: 750 : 750 : 158.5 : +- 3.0 : +- 6.0 : 8.0 : 12.0 : 10.10 : +- 0.10	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm	: : 750 : 158.5 : + 3.0 : + 6.0 : 8.0 : 12.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity	: 750 : 750 : 158.5 : +- 3.0 : +- 6.0 : 8.0 : 12.0 : 10.10 : +- 0.10	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm	: 750 : 750 : 158.5 : +- 3.0 : +- 6.0 : 8.0 : 12.0 : 10.10 : +- 0.10	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity	: 750 : 750 : 158.5 : +- 3.0 : +- 6.0 : 8.0 : 12.0 : 10.10 : +- 0.10	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  rack travel mm Tolerance mm  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 750 : 750 : 158.5 : +- 3.0 : +- 6.0 : 8.0 : 12.0 : 10.10 : +- 0.10	

Check tolerance

cm3/1000s.

: +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 253.0

Tolerance

cm3/1000 strokes : +-20.0

Check tolerance

cm3/1000s.

: +- 24.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm: 5.20

Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 20.5

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s.

: +- 5.0

Spreed

Tolerance

cm3/1000 strokes :

7.0

Check tolerance

cm3/1000s.

11.0

End of test specification sheet

:

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.10.98 : ISO 4113

Combination No. : 0 402 736 863

Injection pump

Pump designation : PES6P120A120RS7206

EP type number : 0 412 726 835

Governor

Governer design. : RQV350...1100PA924

: -12K

Governer no. : 0 421 815 433

Cust. part No. : 3282473

Customer-spec. information Customer : CUMMINS : 6CTAA Motor Power KW : 202.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 90
Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15 Tolerance mm : +- 0.05	Rated speed rpm : 399 guide sleeve travel mm : 1.98
Del. quantity cm3/1000 strokes : 159.0	travel mm : 1.98 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 449 + guide sleeve + travel mm : 2.54
Check tolerance	Tolerance mm : + 0.25
cm3/1000s. : +- 4.0	Rated speed rpm : 540 guide sleeve
Spreed	+ travel mm : 3.56 + Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 1550 guide sleeve
Check tolerance cm3/1000s. : 9.0	travel mm : 13.50 Tolerance mm : +- 0.50
	GUIDE SLEEVE POSITION
Rated speed rpm : 350	‡
Rack travel in mm : 5.30	- control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity	+ Rated speed rpm : 1420
cm3/1000 strokes : 26.0	T Nated speed (pii) . 1420
Tolerance	T Book trought in mr
cm3/1000 strokes : + 3.0	+ Rack travel in mm : 9.00
CM3/IIIKI STCOKOS * + 3 II	+ Tolerance mm : + 3.00
***************************************	1 TOCCT WITH
Check tolerance	Total and their sections
Check tolerance cm3/1000s. : +- 5.0	<u> </u>
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : +- 5.0	<u> </u>
Check tolerance cm3/1000s. : +- 5.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL Rated speed rpm : 1157	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0  Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.36	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER control lever
Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0  Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.36 Tolerance mm : + 0.25  Rated speed rpm : 25  Rated speed rpm : 1.36 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER
Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.36 Tolerance mm : + 0.25  Rated speed rpm : 0.25  Rated speed rpm : 250 guide sleeve travel mm : 1.36 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever position degree : 59.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : + 5.0  Spreed  Tolerance cm3/1000 strokes : 7.0  Check tolerance cm3/1000s. : 11.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1157 guide sleeve travel mm : 8.60 Tolerance mm : + 0.25  Rated speed rpm : 350 guide sleeve travel mm : 1.36 Tolerance mm : + 0.25  Rated speed rpm : 25  Rated speed rpm : 1.36 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 159.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER  control lever position degree : 59.0

tolerance degree	: <b>←</b> 4.0	+
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1145	ANEROID/ALTITUDE COMPENSATOR TEST
rack travel mm Rated speed rpm Tolerance 1/min		+ SETTING + Rated speed rpm : 1100 + Pressure hPa : 1200 + rack travel mm : 12.15
rack travel mm Tolerance mm		rack travel mm : 12.15 Tolerance mm : + 0.05
Rated speed rpm		Rated speed rpm : 1100 Pressure hPa : - rack travel mm : 8.10 Tolerance mm : + 0.20
LOW IDLE		MEASUREMENT
control lever		Rated speed rpm : 1100
position degree tolerance degree	: 73.0 : +- 4.0	Pressure hPa : 300 rack travel mm : 8.90 Tolerance mm : +- 0.20
control lever position degree tolerance degree		Pressure hPa : 600 rack travel mm : 11.20 Tolerance mm : + 0.10
Setting point w/o	out bumper spring	<u> </u>
Rated speed rpm	: 250	Start interlock
CRT mm min.	: > 6.80	Rated speed rpm : > 100 Rated speed rpm : < 270
Testing: Rated speed rpm	: 350	Check speed 1/min : > 80
rack travel mm Tolerance mm		Check speed 1/min : < 290
Rated speed rpm	: 450	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm		Aneroid pressure  hPa : 1200 Rated speed rpm : 600 Del. quantity
Rated speed rpm rack travel mm	: 11.20	cm3/1000 strokes : 177.0 Tolerance
Tolerance mm  Rated speed rpm		+ cm3/1000 strokes : +- 3.0 + Check tolerance + cm3/1000s. : +- 6.0
rack travel mm Tolerance mm		Spreed Tolerance
		+ cm3/1000 strokes : 8.0 + Check tolerance

12.0

cm3/1000s.

rack travel mm : 11.80 Tolerance mm : + 0.10

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 107.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000s. : +- 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : + 24.0

# LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.30 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 26.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 5.0

Spreed

Tolerance

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000s. : 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.08.98 Test oil : ISO 4113

Combination No. : 0 402 744 802

Injection pump

Pump designation : PES4P120A320RS7312

: -1

EP type number : 0 412 724 803

Governor

Governer design. : RQ400/1200PA1132-1

Governer no. : 0 421 801 794

Cust. part No. : 51.11103-7469

Customer-spec. information

Customer : MAN

: D0824LFL06/L0H05 Motor

Power KW : 114.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

: 40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : ← 0.1

Overflow quantity

min. L/h : 110
Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : +-: +- 0.05 Check

: **←** 0.10 tolerance mm

: 1-3-4-2 Firing order

: 0-90-180-270 Phasing

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

## Start of delivery blocking

: **←** 0.10 Tolerance

Check

tolerance °NW : **←** 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.05 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 206.0

L16

Tolerance cm3/1000 strokes : +- 1.0	guide sleeve travel mm : 7.00 Tolerance mm : +- 0.10
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1390 guide sleeve
Spreed	- travel mm : 11.50 - Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : 8.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : 12.0	•
	control lever position degree : 109 Rated speed rpm : 600
Rated speed rpm : 400	Rack travel in mm : 15.50
Rack travel in mm : 4.80  Tolerance mm : + 0.10  Del. quantity	Tolerance mm : + 0.80
cm3/1000 strokes : 40.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : + 3.0 Check tolerance	Rated speed rpm : 1000 Aneroid pressure
cm3/1000s. : +- 6.0	hPa : 1200
Spreed Tolerance	Del. quantity cm3/1000 strokes : 206.0
cm3/1000 strokes : 8.0 Check tolerance	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s. : 12.0	Check tolerance cm3/1000S. : + 4.0
(B) SETTING OF INJECTION PUMP	Spreed Tolerance
WITH GOVERNOR +	cm3/1000 strokes : 8.0 Check tolerance
GUIDE SLEEVE TRAVEL	cm3/1000s. : 12.0
Rated speed rpm : 1258	
guide sleeve + travel mm : 7.48 +	CONTROL LEVER
Tolerance mm : + 0.15	control lever position degree : 97.0
Rated speed rpm : 400 + guide sleeve +	tolerance degree : + 4.0
travel mm : 3.62 Tolerance mm : + 0.20	RATED SPEED rack travel mm : 12.05
+	Rated speed rpm : 1250
Rated speed rpm : 1200	Tolerance 1/min : +- 8
travel mm : 7.00 + Tolerance mm : + 0.10	rack travel mm : 4.00 Rated speed rpm : 1335 Tolerance 1/min : +- 15
Rated speed rpm : 472	rack travel mm : 0.50
travel mm : 5.36 +	Tolerance mm : ← 0.50
Tolerance mm : +- 0.10	Rated speed rpm : 1400
Rated speed rpm : 580 +	

LOW	IDLE
1 1 1 1 1	1171 -

control lever

position degree : 72.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. :> 7.00

Testing:

Rated speed rpm : 400 rack travel mm : 4.80 Tolerance mm : +-0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 1000 rack travel mm : 13.05 Tolerance mm : +- 0.05

Rated speed rpm : 1200 rack travel mm : 13.05 Tolerance mm : +- 0.10

Rated speed rpm : 700 rack travel mm : 13.05 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 7.65
Tolerance mm : + 0.15

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 140 rack travel mm : 8.55 Tolerance mm : + 0.15

Pressure hPa : 500 rack travel mm : 11.85 Tolerance mm : + 0.25

Start interlock

Rated speed rpm : < 280
Rated speed rpm : > 320

Check

speed 1/min : < 260 Check speed 1/min : > 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 1200 Del. quantity

cm3/1000 strokes : 208.0 Tolerance

cm3/1000 strokes : + 3.0

Check tolerance cm3/1000S. : +- 6.0

Aneroid pressure

hPa : 1200
Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 218.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 120.0
Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity

cm3/1000 strokes : 206.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 40.0
Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.06.96 : ISO 4113

Combination No. : 0 402 746 616

Injection pump

Pump designation : PES6P130A720LS7422 EP type number : 0 412 736 809

Governor

Governer design. : RQV300...900PA946-1

Governer no. : 0 421 813 992

Cust. part No. :

Customer—spec. information

Customer : IVECO-AIFO

Motor

: 8217 SRI

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity

min. l/h

: 200

min. l/h : 200 Tolerance l/h : +- 20.0

assembly

Test nozzle holde

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

x inside diameter : x length mm : 1000

Outside diameter : 8.0

3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

: 5.05 Prestroke mm

: +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00

Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Check

tolerance °NW : <del>←</del> 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm :

900

Rack travel in mm : 12.05

L20

Tolerance mm	: +- 0.05	∔ guide sleeve	
		+ travel mm	: 3.52
Del. quantity		+ Tolerance mm	: + 0.25
cm3/1000 strokes	: 245.0	+	
		+ Rated speed rpm	: 1220
Tolerance		+ guide sleeve	
cm3/1000 strokes	: +- 1.5	+ travel mm	: 11.50
		+ Tolerance mm	: +- 0.50
Check tolerance	5.0	†	
cm3/1000s.	: +- 5.0		
0		+ GUIDE SLEEVE POSI	ITION
Spreed		†	
Tolerance		control lever	
cm3/1000 strokes	: 6.0		1
Chist food Strokes	. 0.0	+ position degree + Rated speed rpm	
Check tolerance		T Rated speed rpill	. 1070
cm3/1000s.	: 10.0	Rack travel in mm	n: 11.05
THE PARTY OF STREET		Tolerance mm	
		1 Con across man	2.10
		ļ <del></del>	
Rated speed rpm	: 300	+ FULL LOAD DELIVER	RY AT FULL LOAD STOP
·		+	
Rack travel in mm		+ Rated speed rpm	: 900
Tolerance mm	: <del>+-</del> 0.10	+ Aneroid pressure	
Del. quantity		+ hPa	: 1200
cm3/1000 strokes	: 22.0	+ Del. quantity	
Tolerance		+ cm3/1000 strokes	: 245.0
cm3/1000 strokes	: <b>←</b> 3.0	+ Tolerance	
Check tolerance	. 7.0	+ cm3/1000 strokes	: +- 1.5
cm3/1000s.	: ← 7.0	+ Check tolerance	
Spreed		+ cm3/1000s.	: <b>←</b> 5.0
Tolerance	. 10.0	Spreed	
cm3/1000 strokes	: 10.0	+ Tolerance	
Check tolerance cm3/1000s.	: 14.0	+ cm3/1000 strokes	: 6.0
cm3/ (uuus.	: 14.0	+ Check tolerance + cm3/1000s.	: 10.0
		1 0003.	: 10.0
(B) SETTING OF IN.	IECTION PLIMP	I	
WITH GOVERNOR	2011011 10/11		
		- CONTROL LEVER	
		+	
GUIDE SLEEVE TRAVE	EL	+ control lever	
		+ position degree	: 120.0
Rated speed rpm	: 959	+ tolerance degree	: +- 4.0
guide sleeve		+	
travel mm	: 7.98	+ RATED SPEED	
Tolerance mm	: +- 0.15	+ rack travel mm	
	700	+ Rated speed rpm	
Rated speed rpm	: 300	+ Tolerance 1/min	: +- 5
guide sleeve		+ Check	. 45
trave: mm	: 1.17	+ speed 1/min	: +- 10
Tolerance mm	: <b>←</b> 0.20	T pack thought and	. / 00
Dated anood non	: 766	+ rack travel mm	
Rated speed rpm guide sleeve	. 700	Rated speed rpm Tolerance 1/min	
travel mm	: 5.97	+ Check	. + 13
Tolerance mm	: + 0.25	+ speed 1/min	: +- 20
roter grice min		Speed Milli	
Rated speed rpm	: 540	T rack travel mm	: 0.50
acca speed (piii	· 510	1 1 4 4 CT LIGHT	. 0.50

Tolerance mm : +- 0.50 Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 79.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 300 rack travel mm : 4.60 Tolerance mm : + 0.10

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 12.05 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 12.10 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 550
Pressure hPa : rack travel mm : 9.70
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 550

Pressure hPa : 420 rack travel mm : 10.30

Tolerance mm : +- 0.15

Pressure hPa : 450 rack travel mm : 10.85 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 256.0

Tolerance

cm3/1000 strokes : +- 3.5

Check tolerance

cm3/1000s. : +- 7.0

Aneroid pressure

hPa : -Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 172.5

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 5.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.60 Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 7.0
Spreed
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000s. : 14.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28.02.97 : ISO 4113 Edition Test oil

Combination No. : 0 402 746 629

Injection pump

Pump designation : PES6P120A320RS7324 EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1335 Governer no. : 0 421 801 816

Cust. part No. : 51.11103-7565

Customer-spec. information

Customer : MAN

: D 0826 LOH 15 Motor

Power KW : 162.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 175
Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : ← 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 12.00 Tolerance mm : ← 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45 Tolerance mm :  $\leftarrow$  0.05

_	† guide sleeve
Del. quantity cm3/1000 strokes : 190.0	travel mm : 4.60 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 460 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 6.00 Tolerance mm : + 0.10
Spreed	Rated speed rpm : 1420 guide sleeve
Tolerance - 8.0 -	travel mm : 11.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : 12.0	GUIDE SLEEVE POSITION
-	control lever
Dated aread area . 700	position degree : 109
Rated speed rpm : 300	Rated speed rpm : 600
Rack travel in mm : 5.20 - Tolerance mm : +- 0.10 -	Rack travel in mm : 20.00 Tolerance mm : +- 0.80
Del. quantity - cm3/1000 strokes : 29.0 -	
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : + 3.0	<b>+</b>
Check tolerance - cm3/1000s. : +- 6.0 -	Rated speed rpm : 1200 Aneroid pressure
Spreed	hPa : 1500
Tolerance	Del. quantity
cm3/1000 strokes : 8.0 - Check tolerance -	- cm3/1000 strokes : 190.0 - Tolerance
cm3/1000s. : 12.0	cm3/1000 strokes : +- 1.0
. , , , , , , , , , , , , , , , , , , ,	Check tolerance
(0) 0555510 05 51115557011 0180	-  cm3/1000s. : + 4.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- Spreed - Tolerance
WITH COVERIOR	cm3/1000 strokes : 8.0
	- Check tolerance
GUIDE SLEEVE TRAVEL	- cm3/1000s. : 12.0
Rated speed rpm : 1245 guide sleeve	
travel mm : 6.37	- CONTROL LEVER
Tolerance mm : +- 0.15	- - control lever
Rated speed rpm : 300	- position degree : 93.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 1.97 + Tolerance mm : + 0.20 +	- RATED SPEED
Total disce thin	rack travel mm : 11.45
Rated speed rpm : 1200	- Rated speed rpm : 1245
guide sleeve + travel mm : 6.00 +	- Tolerance 1/min : +- 8
Tolerance mm : +- 0.10	rack travel mm : 4.00
+	- Rated speed rpm : 1330
Rated speed rpm : 366	- Tolerance 1/min : +- 15

rack travel mm Tolerance mm Rated speed rpm	: <del>+-</del> 0.25
LOW IDLE	·
control lever position degree tolerance degree	: 74.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 290
CRT mm min.	: > 8.20
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 365 : +- 20
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1200 : 12.45 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.45 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.45 : ← 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.60 : + 0.20

MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 140 : 8.95 : ← 0.05	
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.75 : + 0.15	
Start interlock		
Rated speed rpm Rated speed rpm	: > 215 : < 240	
Check speed 1/min Check	: > 195	
speed 1/min	: < 260	
FUEL DELIVERY CHA	RACTERISTICS	_
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		
cm3/1000 strokes Check tolerance cm3/1000s.	: ← 3.0 : ← 6.0	
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 12.45 : + 0.10 : 199.0 : + 3.0 : + 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 129.0	

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance : +- 4.0 cm3/1000s.

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 189.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

: +- 19.0 cm3/1000s.

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.20 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 29.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.01.97 : ISO 4113

Combination No. : 0 402 746 630

Injection pump

Pump designation : PES6P130A720LS7422 EP type number : 0 412 736 809

Governor

Governer design. : RQV300...900PA1336

Governer no. : 0 421 814 191

Cust. part No. :

Customer-spec. information

Customer : IVECO-AIFO

Motor

: 8217 SRI 10.00

Power KW : 265.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 200 Tolerance l/h : + 20.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 5.05 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Check

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm Tolerance mm	: 12.05 : +- 0.05
Del. quantity cm3/1000 strokes	: 245.0
Tolerance cm3/1000 strokes	: + 1.5
Check tolerance cm3/1000s.	: <del>+-</del> 5.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0
Rated speed rpm	: 300
Rack travel in mm	: 4.60
Tolerance mm	: +- 0.10
Del. quantity	22.0
cm3/1000 strokes Tolerance	: 22.0
cm3/1000 strokes	: +- 3.0
Check tolerance	. 7.0
cm3/1000s. Spreed	: +- 7.0
Tolerance	
	: 10.0
Check tolerance cm3/1000s.	: 14.0
CIII 57 10005.	. 14.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE TRAVE	EL .
Rated speed rpm	: 959
guide sleeve travel mm	: 7.98
Tolerance mm	: +- 0.15
Rated speed rpm	: 300
guide sleeve travel mm	: 1.17
Tolerance mm	: +- 0.20
Rated speed rpm guide sleeve	: 766
travel mm	: 5.97
Tolerance mm	: +- 0.25

Rated speed rpm guide sleeve travel mm Tolerance mm	: 550 : 3.62 : + 0.25
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1220 : 11.50 : + 0.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.5 : +- 5.0
CONTROL LEVER	
control lever position degree tolerance degree	: 120.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 11.00 : 945 : ← 5 : ← 10
rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 4.00 : 1035 : + 15 : +- 20
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1200

LOW IDLE

control lever

position degree : 79.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.05

Testing:

Rated speed rpm : 300 rack travel mm : 4.60 Tolerance mm : + 0.10

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 12.05 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 12.10 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 550
Pressure hPa : rack travel mm : 9.70
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 550

Pressure hPa : 420 rack travel mm : 10.30 Tolerance mm : +- 0.15

Pressure hPa : 450 rack travel mm : 10.85 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 256.0

Tolerance

cm3/1000 strokes : +- 3.5 Check tolerance

cm3/1000s. :  $\leftarrow$  7.0

Aneroid pressure

hPa : -Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 172.5

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. :  $\leftarrow$  5.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated, rack must reach start position in max. control lever setting.

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 22.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 7.0

Spreed

Tolerance

cm3/1000 strokes : 10.0

Check tolerance

cm3/1000s.

: 14.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.03.98 : ISO 4113

Combination No. : 0 402 746 844

Injection pump

Pump designation : PES6P120A320RS7162

EP type number : 0 412 726 819

Governor

Governer design. : RQ750PA836-2

Governer no. : 0 421 801 628

Cust. part No. :

Customer-spec. information Customer : PERKINS Motor : 2006 TAG Power KW : 280.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-4-2-6-3-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + - 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05

Tolerance mm : +- 0.05

Del. quantity		∔ guide sleeve
cm3/1000 strokes	: 380.0	+ travel mm : 11.50
		+ Tolerance mm : + 0.50
Tolerance		1
cm3/1000 strokes	: +- 1.0	
		FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		
cm3/1000S.	: +- 4.0	Rated speed rpm : 700
		Aneroid pressure
Spreed		+ hPa : -
op. 304		Del. quantity
Tolerance		cm3/1000 strokes : 380.0
cm3/1000 strokes	: 5.0	+ Tolerance
0	. 5.0	+ cm3/1000 strokes : +- 1.0
Check tolerance		Check tolerance
cm3/1000S.	: 9.0	cm3/1000s. : +- 4.0
CHS/ 10003.	. 7.0	Spreed - 4.0
	<del></del>	Tolerance
		cm3/1000 strokes : 5.0
Rated speed rpm	: 300	Check tolerance
Del. quantity	. 300	- cm3/1000s. : 9.0
cm3/1000 strokes	. /1.0	T CIR37 10005. : 9.0
Tolerance	. 41.0	Ţ
cm3/1000 strokes	7 0	T
	; +- 3.0	CONTROL I SUCO
Check tolerance		CONTROL LEVER
cm3/1000s.	: ← 6.0	T annial laws
Spreed		+ control lever
Tolerance	0.0	position degree : 89.0
cm3/1000 strokes	: 8.0	tolerance degree : +- 4.0
Theory to Labores		
Check tolerance	40.0	<b>T</b>
cm3/1000s.	: 12.0	Ŧ
	: 12.0	ASSEMBLY GOVERNOR SETTING
cm3/1000s.		+
cm3/1000S.  (B) SETTING OF IN		+ Rated speed rpm : 750
cm3/1000s.		+
cm3/1000S.  (B) SETTING OF IN		Rated speed rpm : 750 rack travel mm : 12.00
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Rated speed rpm : 750 rack travel mm : 12.00 Rated speed rpm : 784
cm3/1000S.  (B) SETTING OF IN	JECTION PUMP	Rated speed rpm : 750 rack travel mm : 12.00 Rated speed rpm : 784 Tolerance 1/min : +- 4
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV	JECTION PUMP	Rated speed rpm : 750 rack travel mm : 12.00 Rated speed rpm : 784
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm	JECTION PUMP	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve	JECTION PUMP  /EL : 757	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm	JECTION PUMP  /EL : 757 : 1.84	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve	JECTION PUMP  /EL : 757	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm	: 757 : 1.84 : + 0.25	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm	JECTION PUMP  /EL : 757 : 1.84	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	: 757 : 1.84 : + 0.25 : 930	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : +- 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 820  Rated speed rpm : 751
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm	HECTION PUMP  FEL  : 757  : 1.84  : + 0.25  : 930  : 42.98	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	: 757 : 1.84 : + 0.25 : 930	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : +- 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 820  Rated speed rpm : 751
Cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	HECTION PUMP  FEL  : 757  : 1.84  : + 0.25  : 930  : 42.98	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : +- 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 820  Rated speed rpm : 751
Cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	HECTION PUMP  FEL  : 757  : 1.84  : + 0.25  : 930  : 42.98	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820  Rated speed rpm : 751 rack travel mm : 12.00
Cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Tolerance mm	### JECTION PUMP  ##################################	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820  Rated speed rpm : 751 rack travel mm : 12.00  Rated speed rpm : 785
Cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm  Rated speed rpm  Rated speed rpm	### JECTION PUMP  ##################################	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820  Rated speed rpm : 751 rack travel mm : 12.00  Rated speed rpm : 785 Tolerance 1/min : + 4
Cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	### JECTION PUMP  ##################################	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 4.00  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 820  Rated speed rpm : 751 rack travel mm : 12.00  Rated speed rpm : 785 Tolerance 1/min : + 4
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Cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	: 757 : 1.84 : + 0.25 : 930 : 42.98 : + 0.25 : 820 : 9.41 : + 0.25 : 824	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 751 rack travel mm : 12.00  Rated speed rpm : 785 Tolerance 1/min : + 4 rack travel mm : 4.00  Rated speed rpm : 785 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 752  Rated speed rpm : 752
Cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	### JECTION PUMP  ##################################	Rated speed rpm : 750 rack travel mm : 12.00  Rated speed rpm : 784 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 751 rack travel mm : 12.00  Rated speed rpm : 785 Tolerance 1/min : + 4 rack travel mm : 4.00  Rated speed rpm : 785 Tolerance 1/min : + 4 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 785 Rated speed rpm : 785 Tolerance 1/min : + 4 Rack travel mm : 0.50 Rated speed rpm : 0.50 Rated speed rpm : 820

Rated speed rpm Tolerance 1/min rack travel mm rack travel mm Tolerance mm Rated speed rpm	: +- 4 : 4.00 : 0.50
Rated speed rpm rack travel mm	: 753 : 12.00
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	. 0.50
Rated speed rpm rack travel mm	: 754 : 12.00
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 820
Rated speed rpm rack travel mm	
Rated speed rpm Tolerance 1/min rack travel mm	: 789 : ← 4 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 820
TOPOUE CONTROL	

TORQUE CONTROL		
Rated speed rpm	:	700
rack travel mm	:	13.05
Tolerance mm	: +	- 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 320.0 Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000 strokes : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.02.97 Test oil : ISO 4113

Combination No. : 0 402 746 967

Injection pump

Pump designation : PES6P120A320RS7324 EP type number : 0 412 726 905

Governor

Governer design. : RQ300/1200PA1132 Governer no. : 0 421 801 708

Cust. part No. : 51.11103-7296

Customer-spec. information Customer : MAN

Motor : D0826LF11/LFL03 Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity min. L/h : 175
Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45

Tolerance mm :  $\leftarrow$  0.05

	+	guide sleeve	
Del. quantity	+	travel mm	: 4.31
cm3/1000 strokes :	190.0	Tolerance mm	: <del>-</del> 0.10
	<del></del>		
Tolerance	+	Rated speed rpm	: 530
cm3/1000 strokes : +-	- 1.0 +	guide sleeve	4 00
Charle to Lamones	<del></del> †	travel mm	: 6.00
Check tolerance cm3/1000s. : +-	- 4.0	Tolerance mm	: +- 0.10
CIIS/ 10003 +-	I	Rated speed rpm	: 1430
Spreed		guide sleeve	. 1450
<b>Op.</b> 332	1	travel mm	: 11.50
Tolerance	1	Tolerance mm	: +- 0.50
cm3/1000 strokes :	8.0		
	<del> </del>	<del></del>	
Check tolerance	12.0	GUIDE SLEEVE POSIT	TION
cm3/1000s. :	12.0		
	I	control lever	
	$\mathbf{I}$	position degree	: 109
Rated speed rpm :	300	Rated speed rpm	
nated opeca i piii	1	Nacca Speed I piii	. 000
Rack travel in mm :	5.20	Rack travel in mm	: 20.00
	0.10	Tolerance mm	: +- 0.80
Del. quantity	+		
cm3/1000 strokes :	29.0		
Tolerance	<del>-</del> - +	FULL LOAD PELIVERY	AT FULL LOAD STOP
cm3/1000 strokes : +-	3.0	nation design	4200
Check tolerance	6.0		: 1200
cm3/1000s. : +- Spreed	7 6.0	Aneroid pressure hPa	: 1500
Tolerance	I	Del. quantity	. 1300
cm3/1000 strokes :	8.0	cm3/1000 strokes	: 190.0
Check tolerance	+	Tolerance	7,0.5
cm3/1000s. :	12.0		: +- 1.0
	+	Check tolerance	
	+	cm3/1000s.	: <del>←</del> 4.6
(B) SETTING OF INJECTION	ON PUMP	Spreed	
WITH GOVERNOR	†	Tolerance	0.0
			: 8.0
GUIDE SLEEVE TRAVEL	T	Check tolerance cm3/1000S.	: 12.0
GOIDE SEEEVE TRAVEL	I	CIII 10003.	. 12.0
Rated speed rpm :	1257		
guide sleeve	+		
travel mm :	6.37	CONTROL LEVER	
Tolerance mm : +-	0.10		
	+	control lever	
Rated speed rpm :	300 +	position degree	
guide sleeve	1 11	tolerance degree	: +- 4.0
	1.41 + 0.10 +	DATEN COEEN	
Tolerance mm : +-	1	RATED SPEED rack travel mm	. 11 //5
Rated speed rpm : '	1200 I		· 1245
guide sleeve	1	and the second s	: <del>+-</del> 8
travel mm :	6.00	· = == i mile di itimiti	. <del>-</del>
	0.10	rack travel mm	: 4.00
	+	Rated speed rpm	: 1328
Rated speed rpm :	425		: +- 15

rack travel mm Tolerance mm Rated speed rpm	: 0.25 : +- 0.25 : 1460
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1200 : 12.45 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.4 <sup>5</sup> : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.45 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.45 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 8.60 : +- 0.20
MN9	

MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 140 : 8.95 : ← 0.05
Pressure hPa rack travel mm Tolerance mm	: 700 : 11.75 : ← 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min	: > 80
Check speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 189.0
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 12.45 : + 0.10 : 199.0 : + 3.0 : + 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: - : 500 : 129.0 : +- 1.0

Check tolerance : + 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 Del quantity

cm3/1000 strokes : 189.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 5.20 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 29.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

cm3/1000 strokes :

8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.03.97 Test oil : ISO 4113

Combination No. : 0 402 746 984

Injection pump

Pump designation : PES6P120A320RS7324 EP type number : 0 412 726 905

Governor

Governer design. : RQV300...1200PA1131

Governer no. : 0 421 814 088

Cust. part No. : 51.11103-7330

Customer-spec. information

Customer : MAN

: D0826LF11/LFL03 Motor

Power KW : 162.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 G25

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 175
Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 12.00 Tolerance mm :  $\leftarrow$  0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : ← 0.50

Check

: +- 0.75 tolerance °NW

Start of delivery blocking

Tolerance : + 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.45 Tolerance mm : +-0.05

		+ guide sleeve
Onl mundal.		
Del. quantity cm3/1000 strokes	: 190.0	travel mm : 2.36 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 397 guide sleeve
		+ travel mm : 3.01
Check tolerance cm3/1000s.	: +- 4.0	Tolerance mm : + 0.25
Carood		+ Rated speed rpm : 440 + guide sleeve
Spreed		travel mm : 3.37
Tolerance cm3/1000 strokes	: 8.0	Tolerance mm : +- 0.25
Check tolerance		+ Rated speed rpm : 1470 + guide sleeve
cm3/1000s.	: 12.0	+ travel mm : 13.50
CHO/ 10003.	. 12.0	
		+ Tolerance mm : +− 0.50
Rated speed rpm	: 300	+ GUIDE SLEEVE POSITION
Rack travel in mm	: 5.40	1
		T
Tolerance mm	: +- 0.10	+ control lever
Del. quantity		<pre>position degree : - 1</pre>
cm3/1000 strokes	: 29.0	+ Rated speed rpm : 1320
Tolerance		+
cm3/1000 strokes	: <del>-</del> 3.0	+ Rack travel in mm : 11.45
Check tolerance		+ Tolerance mm : +- 1.30
cm3/1000S.	: +- 6.0	1 Total and 1 1.50
	. += 0.0	T
Spreed		
Tolerance		+ FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: 8.0	+
Check tolerance		+ Rated speed rpm : 1200
cm3/1000s.	: 12.0	+ Aneroid pressure
		+ hPa : 1500
		+ Del. quantity
(D) SETTING OF TH	IECTION NIME	
(B) SETTING OF IN.	JELITON PUMP	+ cm3/1000 strokes : 190.0
WITH GOVERNOR		+ Tolerance
		+ cm3/1000 strokes : + 1.0
		+ Check tolerance
GUIDE SLEEVE TRAVE	EL	+ cm3/1000s. : $+$ 4.0
		Spreed
Rated speed rpm	: 1263	+ Tolerance
guide sleeve	. ,200	+ cm3/1000 strokes : 8.0
travel mm	: 10.49	+ Check tolerance
	: +- 0.25	
Tolerance mm	: - 0.23	+ cm3/1000s. : 12.0
Rated speed rpm	: 300	1
	. 500	
guide sleeve	. 1.60	CONTROL LEVED
travel mm	: 1.69	+ CONTROL LEVER
Tolerance mm	: +- 0.25	†
		+ control lever
Rated speed rpm	: 806	+ position degree : 123.0
guide sleeve		+ tolerance degree : +- 4.0
travel mm	: 5.85	1
	: +- 0.25	+ RATED SPEED
TOCCI GITCE TIRT		rack travel mm : 11.45
Dahad asset ass	. 7/7	
Rated speed rpm	: 347	Rated speed rpm : 1245
		+ Tolerance 1/min : +- 5

rack travel mm Rated speed rpm Tolerance 1/min	: 1340	+ Pressure + rack trav + Tolerance	et mm mm
rack travel mm Tolerance mm	: 0.25 : ← 0.25	+ MEASUREME + Rated spe	
Rated speed rpm		Pressure rack trave	hPa el mm
LOW IDLE		Pressure     rack trave   Tolerance	el mm
control lever position degree tolerance degree	: 83.0 : +- 4.0	Start into	erlock
	out bumper spring	Rated spec	
Rated speed rpm CRT mm min.	: 250 : > 6.50	Check speed 1/m	in
Testing:		Check speed 1/m	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.40 : + 0.10	FUEL DELIV	/ERY C
Rated speed rpm	: 360	Aneroid pi	essur
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm	: 12.45 : ← 0.05 : 1000 : 12.45	- + Rated speed	ity stroke stroke erance
Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 12.45	Aneroid pr hPa Rated spee rack trave Tolerance	ed rpm
ANEROID/ALTITUDE COMPENSATOR TEST		- Del. quant cm3/1000 s - Tolerance - cm3/1000 s	ity strokes strokes
SETTING		+ Check tole + cm3/1000s.	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 12.45	Aneroid pr HPa Rated spee Del. quant	d rpm
Rated speed rpm	: 500	cm3/1000 s	
1447			

hPa : -vel mm : 8.60 : **←** 0.20 e mm ENT eed rpm : 500 : 140 : 8.95 hPa /el mm : +- 0.05 e mm 700 hPa vel mm : 11.85 : +- 0.15 e mm erlock ed rpm : > 100 ed rpm : < 240 in : > 80 260 nin : < VERY CHARACTERISTICS ressure : 1500 ed rpm : 1000 itity strokes: 189.0 strokes : + 3.0 erance : +- 6.0 ressure 1500 ed rpm : 750 el mm : 12.45 : **←** 0.10 mm tity strokes: 199.0 strokes : +- 3.0 erance : +- 6.0 ressure ed rpm : 500 tity strokes: 129.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000S. : +- 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 189.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000S. : +- 19.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.40

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 29.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.06.98 Test oil : ISO 4113

Combination No. : 0 402 946 013

Injection pump

Pump designation : PES6P120A320RS8028

EP type number : 0 412 926 021

Governor

Governer design. : RQV275...1250PA1189K

Governer no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 06.02.26Y41

Power KW : 184.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

Tolerance bar : + 1.5

: 208.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 5.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

 $^\circ$ NW after s.o.d. : -0.25 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

travel : 11.00 Difference ° CS : 2.25

		+ Rated speed rpm : 275
CRT ZERO POSITIO	ANI	guide sleeve + travel mm : 1.10
CKI ZEKO POSTITO	Л	travel mm : 1.10 Tolerance mm : + 0.25
		T roter ance min . += 0.25
Rack travel in m	nm : 14.30	Rated speed rpm : 912
Tolerance mm		guide sleeve
TO COT CATOC THAT		+ travel mm : 6.79
		+ Tolerance mm : +- 0.25
BASIC SETTING		+
		Rated speed rpm : 412
Rated speed rpm	: 1250	+ guide sleeve
, ,		+ travel mm : 2.53
Del. quantity		+ Tolerance mm : +- 0.25
cm3/1000 strokes	s: 274.0	+
		Rated speed rpm : 462
Tolerance		+ guide sleeve
cm3/1000 strokes	s : +- 1.0	+ travel mm : 3.16
		+ Tolerance mm : +- 0.25
Check tolerance	<del> </del>	<del></del> }
cm3/1000s.	: +- 4.0	+ Rated speed rpm : 550
	<del></del>	+ guide sleeve
Spreed	· · · · · · · · · · · · · · · · · · ·	+ travel mm : 3.97
		+ Tolerance mm : +- 0.25
Tolerance		+
cm3/1000 strokes	; : 5.0	+ Rated speed rpm : 1630
		+ guide sleeve
Check tolerance		+ travel mm : 13.50
cm3/1000s.	: 9.0	+ Tolerance mm : +- 0.50
		GUIDE SLEEVE POSITION
Rated speed rpm	: 275	1
Rack travel in m	m: −7.50	control lever
Tolerance mm		position degree : - 1
	· <del>-</del>	+ Rated speed rpm : 1420
pet, quantity		
Del. quantity cm3/1000 strokes	: 47.0	+
cm3/1000 strokes Tolerance	: 47.0	+ Rack travel in mm : 13.50
cm3/1000 strokes Tolerance		+ Rack travel in mm : 13.50 + Tolerance mm : + 1.50
cm3/1000 strokes		
cm3/1000 strokes Tolerance cm3/1000 strokes		
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed	: +- 2.0	+ Tolerance mm : +- 1.50
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance	: +- 2.0 : +- 6.0	+ Tolerance mm : +- 1.50
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes	: +- 2.0 : +- 6.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: + 2.0 : + 6.0 : 8.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 2.0 : +- 6.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: + 2.0 : + 6.0 : 8.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 6.0 : 8.0 : 12.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 6.0 : 8.0 : 12.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0 Tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INTERIOR CONTRACT	: + 2.0 : + 6.0 : 8.0 : 12.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250  Aneroid pressure  hPa : 1600  Del. quantity  cm3/1000 strokes : 274.0  Tolerance  cm3/1000 strokes : + 1.0
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INTERIOR CONTRACT	: + 2.0 : + 6.0 : 8.0 : 12.0	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : ← 2.0 : ← 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250  Aneroid pressure  hPa : 1600  Del. quantity  cm3/1000 strokes : 274.0  Tolerance  cm3/1000 strokes : + 1.0
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : ← 2.0 : ← 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250  Aneroid pressure  hPa : 1600  Del. quantity  cm3/1000 strokes : 274.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR	: : +- 2.0 : +- 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm	: : ← 2.0 : ← 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAN Rated speed rpm	: : +- 2.0 : +- 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 1600 Del. quantity cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: : +- 2.0 : +- 6.0 : 8.0 : 12.0 NJECTION PUMP	Tolerance mm : + 1.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250  Aneroid pressure  hPa : 1600  Del. quantity  cm3/1000 strokes : 274.0  Tolerance  cm3/1000 strokes : + 1.0  Check tolerance  cm3/1000s. : + 4.0  Spreed  Tolerance  cm3/1000 strokes : 5.0

#### CONTROL LEVER

control lever

position degree : 303.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1325
Tolerance 1/min : +- 15

rack travel mm : -10.30 Rated speed rpm : 1480 Tolerance 1/min : +- 5

rack travel mm : -13.80Tolerance mm : +-0.50Rated speed rpm : 1600

#### LOW IDLE

control Lever

position degree : 252.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : < -6.80

Testing:

Rated speed rpm : 275 rack travel mm : -7.50 Tolerance mm : + 0.10

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800 rack travel mm : -0.75 Tolerance mm : + 0.10

Rated speed rpm : 350 rack travel mm : -4.10 Tolerance mm : + 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1250 Pressure hPa : 1600 Tolerance mm : +- 0.10

Rated speed rpm : 1000
Pressure hPa : rack travel mm : -4.30
Tolerance mm : +- 0.20

#### MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 240 rack travel mm : -3.50 Tolerance mm : +-0.20

Pressure hPa : 480 rack travel mm : -1.50 Tolerance mm : +-0.05

#### Start interlock

Rated speed rpm : > 175 Rated speed rpm : < 240

Check

speed 1/min : > 155 Check speed 1/min : < 260

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1600 Rated speed rpm : 800 Del. quantity

cm3/1000 strokes : 285.0

Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. : +- 6.0

rack travel mm : -4.10 Tolerance mm : + 0.25 Aneroid pressure

hPa 1000 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 181.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : + 19.0

#### LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -7.50 : + 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 47.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +-6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.10.98 Test oil : ISO 4113

Combination No. : 0 402 946 015

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

Governer no. : 0 421 814 157

Cust. part No. : 1383795

Customer-spec. information Customer : SCANIA Motor : DSC 913

#### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 : +- 2.0 temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. l/h : 105
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

## Start of delivery blocking

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in m Tolerance mm	m: 12.90 :+- 0.05	+ Ra + gu + tra
Del. quantity cm3/1000 strokes	: 300.0	To
Tolerance cm3/1000 strokes	: +- 1.0	- + gu + tra
Check tolerance cm3/1000s.	: +- 8.0	- † To
Spreed	<del></del>	_ + FUI
Tolerance cm3/1000 strokes	: 8.0	+ Rat + And + hPa + Del
Check tolerance cm3/1000s.	: 12.0	+ cm3 + Tol
		- → Che
Rated speed rpm	: 250	+ cm3 + Spr + Tol
Rack travel in mo	m: 7.60 : +- 0.10	+ cm3 + Che
Del. quantity cm3/1000 strokes	: 40.0	+ cm <sup>3</sup>
Tolerance cm3/1000 strokes	: +- 3.0	ļ —
Check tolerance cm3/1000s.	: +- 6.0	+ cov
Spreed Tolerance		+ cor
cm3/1000 strokes Check tolerance	: 5.0	† tol
cm3/1000s.	: 8.0	con
(B) SETTING OF INJECTION PUMP WITH GOVERNOR + RAT		
W2111 00 00 1111011		rac
GUIDE SLEEVE TRAV	/EL	+ Rat
Rated speed rpm guide sleeve	: 1058	+ Che + spe
travel mm Tolerance mm	: 7.89 : ← 0.15	+ rac + Rat
Rated speed rpm guide sleeve	: 250	+ Tol + Che + spe
travel mm Tolerance mm	: 1.33 : +- 0.20	+ rac
Rated speed rpm	: 748	+ Tol + Rat
guide sleeve travel mm Tolerance mm	: 6.17 : +- 0.25	<del>†</del> +

Rated speed rpm guide sleeve travel mm Tolerance mm	: 470 : 4.09 : +- 0.25
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1470 : 11.50 : + 0.50
FULL LOAD DELIVER	RY AT FULL LOAD STOP
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 8.0
control lever position degree tolerance degree	: 57.0 : +- 4.0
control lever position degree tolerance degree	: 120.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 11.90 : 1045 : + 5 : + 10
rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 4.00 : 1235 : +- 15 : +- 20
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1350

LOW IDLE

control lever

position degree : 87.0 tolerance degree : + 4.0

control lever

position degree : 23.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

: > 9.80 CRT mm min.

Testing:

250 Rated speed rpm 7.60 rack travel mm Tolerance mm : + 0.10

300 Rated speed rpm :

TORQUE CONTROL

Rated speed rpm : 600 rack travel mm 12.90 Tolerance mm : **←** 0.05

Rated speed rpm : 1000 rack travel mm 12.90 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rpm : : 1500 Pressure hPa 12.90 rack travel mm : Tolerance mm : +- 0.05

Rated speed rpm : 500 Pressure hPa 10.40 rack travel mm Tolerance mm : + - 0.20

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa 350 rack travel mm : 11.15 Tolerance mm : + 0.15

Pressure hPa : 750 rack travel mm 12.15 : +- 0.05 Toterance mm

Start interlock

Rated speed rpm : < 190 Rated speed rpm :> 150

Check

speed 1/min : < 210

Check

speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 Rated speed rpm : 1000 Del. quantity

cm3/1000 strokes : 295.0

Tolerance

cm3/1000 strokes : +-4.0

Check tolerance

cm3/1000s. : +-8.0

Aneroid pressure

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 190.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : ← .6.0

STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm : 20.50

: +- 0.50 Tolerance mm

Del. quantity

cm3/1000 strokes : 265.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

Rated speed rpm	:		250
Rack travel in mm Tolerance mm Del. quantity	:	+	7.60 0.10
cm3/1000 strokes	:		40.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.10.98 Test oil : ISO 4113

Combination No. : 0 402 946 026A

Injection pump

Pump designation : PES6P120A720RS8045 EP type number : 0 412 926 028

Governor

Governer design. : RQV350...1100PA1305K

Governer no. : 0 421 815 967

Cust. part No. : 1388633

Customer-spec. information Customer : SCANIA

Motor : DSI11 75M

## TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

: 40 : + 2.0 temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 80
Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : + 0.75

## Start of delivery blocking

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no: : 1

#### BASIC SETTING

Rated speed rpm : 1100

	1
Rack travel in mm : 11.75 Tolerance mm : +- 0.05	Rated speed rpm : 460 guide sleeve travel mm : 4.07
Del. quantity cm3/1000 strokes : 302.0	Tolerance mm : + 0.25
	Rated speed rpm : 1400
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 13.50
	+ Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 9.0	
	+ GUIDE SLEEVE POSITION
Spreed	†
	<del>†</del>
Tolerance	+ control lever
cm3/1000 strokes : 8.0	→ position degree : - 1
	+ Rated speed rpm : 1237
Check tolerance	
cm3/1000s. : 12.0	↓ Rack travel in mm : 12.75
· 12.0	+ Tolerance mm : + 1.30
	T Total rice mail . + 1.30
	Ť
5 had a day 250	
Rated speed rpm : 350	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rack travel in mm : 4.10	+ Rated speed rpm : 1100
Tolerance mm : + 0.30	+ Aneroid pressure
Del. quantity	→ hPa : 1500
cm3/1000 strokes : 30.0	Del. quantity
Tolerance	- cm3/1000 strokes : 302.0
cm3/1000 strokes : +- 3.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 6.0	+ Check tolerance
Spreed	77.140000
•	
Tolerance	+ Spreed
cm3/1000 strokes : 4.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000S. : 12.0
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	
	+ CONTROL LEVER
	<del></del>
GUIDE SLEEVE TRAVEL	+ control lever
	position degree : 65.0
Rated speed rpm : 1166	+ tolerance degree : + 4.0
guide sleeve	1
travel mm : 10.16	control lever
Tolerance mm : + 0.15	position degree : 119.0
Total drice limit	
Pated speed rate : ZEO	tolerance degree : +- 4.0
Rated speed rpm : 350	DATES ODES
guide sleeve	+ RATED SPEED
travel mm : 2.00	+ rack travel mm : 10.70
Tolerance mm : +- 0.20	+ Rated speed rpm : 1145
	† Tolerance 1/min : +- 5
Rated speed rpm : 755	+ Check
guide sleeve	+ speed 1/min : +- 10
travel mm : 6.14	+
Tolerance mm : +- 0.25	+ rack travel mm : 4.00
	•

Rated speed rpm Tolerance 1/min Check speed 1/min	: 1247 : +- 15 : +- 20
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1350
LOW IDLE	
control lever position degree tolerance degree	: 73.0 : +- 4.0
control lever position degree tolerance degree	: 20.0 : ← 4.0
Setting point w/out	t bumper spring
Rated speed rpm	250
CRT mm min.	> 6.50
Testing:	
Rated speed rpm : rack travel mm : Tolerance mm :	350 4.10 + 0.30
TORQUE CONTROL Rated speed rpm : rack travel mm : Tolerance mm :	1100 11.75 ← 0.05
Rated speed rpm : rack travel mm : Tolerance mm :	700 10.90 +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm : Pressure hPa : rack travel mm : Tolerance mm :	1100 1500 13.75 + 0.05
Rated speed rpm : Pressure hPa : rack travel mm :	1100 - 7 10

Tolerance mm	: +- 0.20
MEASUREMENT	
Rated speed rpm	: 1100
Pressure hPa rack travel mm Tolerance mm	: 340 : 8.35 : + 0.25
Pressure hPa rack travel mm Tolerance mm	: 800 : 10.65 : ← 0.05

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Tolerance cm3/1000 strokes Check tolerance	: 1500 : 700 : + 4.0
cm3/1000S.	: +- 6.0
Aneroid pressure	• -
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes Tolerance	: 163.0
cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 4.0

LOW IDLE				
Rated speed rpm	:		350	
Rack travel in mm Tolerance mm Del. quantity	:	+	4.10 0.30	
cm3/1000 strokes	:		30.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000S. Spreed Tolerance	:	+-	6.0	
cm3/1000 strokes Check tolerance	:		4.0	
cm3/1000s.	:		8.0	

Pressure hPa : - rack travel mm : 7.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.08.98 Test oil : ISO 4113

Combination No. : 0 402 946 031

Injection pump

Pump designation : PES6P120A320RS8050 EP type number : 0 412 926 032

Governor

Governer design. : RQ250/1000PA1342 Governer no. : 0 421 801 822

Cust. part No. : 1388694

Customer—spec. information Customer : SCANIA Motor : DSI 9E01 Power KW : 170.0

#### TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 095

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 80 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.00 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

	1
Rack travel in mm : 12.30 Tolerance mm : +- 0.05	Rated speed rpm : 410 guide sleeve
	+ travel mm : 3.50
Del. quantity	+ Tolerance mm : + 0.10
cm3/1000 strokes : 240.0	Total direction
CHO7 1000 SETERES . 240.0	T 0-4-dd 570
	+ Rated speed rpm : 530
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 4.50
	+ Tolerance mm : + 0.10
Check tolerance	1
cm3/1000s. : + 7.0	Rated speed rpm : 1670
CM37 10003 7.0	
	+ guide sleeve
Spreed	+ travel mm : 11.50
	+ Tolerance mm : + 0.50
Tolerance	+
cm3/1000 strokes : 8.0	
	GUIDE SLEEVE POSITION
Check tolerance	T COLOR SECTAL LOSTITOIA
	Ť
cm3/1000S. : 12.0	†
	† control lever
	+ position degree : 108
	+ Rated speed rpm : 600
Rated speed rpm : 285	
Marca Speca I piii . 203	Rack travel in mm : 16.00
Book Annual in my . E 20	
Rack travel in mm: 5.20	+ Tolerance mm : +→ 0.60
Tolerance mm : +- 0.10	†
Del. quantity	
cm3/1000 strokes : 30.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	1
cm3/1000 strokes : +- 3.0	Rated speed rpm : 700
Check tolerance	
	+ Aneroid pressure
cm3/1000s. : +- 6.0	+ hPa : 1500
Spreed	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 240.0
cm3/1000 strokes : 5.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
= 140000	+ Check tolerance
cm3/1000s. : 8.0	
	+  cm3/1000s. : +- 7.0
	+ Spreed
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : 8.0
	+ Check tolerance
	+ cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	1
GOINE SEEFAE IMMAEL	Ţ
Bahad ayaad aya	T
Rated speed rpm : 1061	
guide sleeve	+ CONTROL LEVER
travel mm : 4.72	+
Tolerance mm : +- 0.15	- control lever
	position degree : 43.0
Rated speed rpm : 285	
	tolerance degree : +- 4.0
guide steeve	†
travel mm : 2.17	+ control lever
Tolerance mm : + 0.20	+ position degree : 105.0
	+ tolerance degree : +- 4.0
Rated speed rpm : 1000	1 2000 41100 4091 00 1 1 1 1 1 1
	DATEN COEEN
guide sleeve	+ RATED SPEED
travel mm : 4.50	+ rack travel mm : 11.30
Tolerance mm : + 0.10	+ Rated speed rpm : 1058

Tolerance 1/min Check speed 1/min  rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min  rack travel mm Tolerance mm Rated speed rpm	: ← 10 : 4.00 : 1245 : ← 15 : ← 20 : 0.50 : ← 0.50
LOW IDLE	······································
control lever position degree tolerance degree	: 85.0 : +- 4.0
control lever position degree tolerance degree	
Setting point w/c	out bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 8.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 285 : 5.20 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: < 2.00 : 390 : +- 20
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.30 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.30 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.30 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.40 : + 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 275 : 10.90 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 425 : 12.10 : +- 0.05
Start interlock	<del></del>
Rated speed rpm Rated speed rpm	: > 100 : < 170
Check speed 1/min Check	: > 80
speed 1/min	: < 190

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 214.0
Tolerance
cm3/1000 strokes : +- 4.0
Check tolerance
cm3/1000s. : +- 6.0

Aneroid pressure
hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000s. : + 4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity

cm3/1000 strokes : 250.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 25.0

## LOW IDLE

Rated speed rpm : 285

Rack travel in mm : 5.20 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 30.0 Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000S. : ← 6.0 Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.01.98 : ISO 4113

Combination No. : 0 403 436 109

Injection pump

Pump designation : PES6MW100/120RS1143 EP type number : 0 413 406 137

Governor

Governer design. : RQV300...1050MW82-4

Governer no. : 0 420 083 168

Cust. part No. : 3915581

Customer-spec. information Customer : CUMMINS Motor Power KW : 175.0

: 6 CTA-830

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 017 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.10 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.65 Tolerance mm : +- 0.05

cm3/1000 strokes : 149.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

Del. quantity

cm3/1000s. : +- 3.0

Spreed

Tolerance cm3/1000 strokes :	3.5	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. :	6.0	cm3/1090S. : +- 3.0 Spreed
	<u> </u>	Tolerance cm3/1000 strokes : 3.5
Rated speed rpm :	300	Check tolerance cm3/1000s. : 6.0
Rack travel in mm : Tolerance mm :	8.00 +- 0.10	
Del. quantity cm3/1000 strokes :	18.0	CONTROL LEVER
Tolerance cm3/1000 strokes : Check tolerance	+ 2.0	control lever position degree : 101.0 tolerance degree : +- 4.0
cm3/1000s. :	<b>←</b> 4.5	RATED SPEED
Tolerance cm3/1000 strokes :	3.5	rack travel mm : 11.60 Rated speed rpm : 1095
Check tolerance cm3/1000s. :	5.5	Tolerance 1/min : +- 5 rack travel mm : 4.00
(B) SETTING OF INJE	CTION PIMP	Rated speed rpm : 1200 Tolerance 1/min : +- 15
WITH GOVERNOR	-	rack travel mm : 0.50
GUIDE SLEEVE TRAVEL	+	Tolerance mm : +- 0.50 Rated speed rpm : 1300
Rated speed rpm : guide sleeve	1100	
travel mm :	8.00 ← 0.10	LOW IDLE
Rated speed rpm : guide sleeve	300	control lever
travel mm :	1.30 +- 0.20	position degree : 71.0 tolerance degree : + 4.0
Rated speed rpm : guide sleeve	550	Setting point w/out bumper spring
travel mm :	3.30 + 0.30	Rated speed rpm : 100
	1210	CRT mm min. : > 9.30
	9.20 + 0.20	Testing:
Toter ance man		Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY A	<del> </del>	
Rated speed rpm : Aneroid pressure	+	TORQUE CONTROL Rated speed rpm : 1050
hPa : Del. quantity cm3/1000 strokes :	900	rack travel mm : 12.65 Tolerance mm : +- 0.05
	+	Rated speed rpm : 700

rack travel mm Tolerance mm		+ Check tolerance cm3/1000s. : 7.0
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity
SETTING		cm3/1000 strokes : 93.0 Tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : 12.65	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : – : 10.30 : + 0.10	STARTING FUEL DELIVERY  Rated speed rpm : 100
MEASUREMENT		rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity
Rated speed rpm	: 500	cm3/1000 strokes : 220.0 Tolerance
Pressure hPa rack travel mm Tolerance mm	: 12.20	cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0
Pressure hPa rack travel mm Tolerance mm	: 225 : 10.90 : ← 0.05	LOW IDLE
Start interlock		Rated speed rpm : 300
Rated speed rpm Rated speed rpm	: > 100 : < 220	Rack travel in mm : 8.00 Tolerance mm : +- 0.10 Del. quantity
Check speed 1/min	: > 80	cm3/1000 strokes : 18.0 Tolerance
Check speed 1/min	: < 240	- cm3/1000 strokes : +- 2.0 - Check tolerance - cm3/1000s. : +- 4.5
FUEL DELIVERY CHA	ARACTERISTICS	Spreed - Tolerance
	· · · · · · · · · · · · · · · · · · ·	+ cm3/1000 strokes : 3.5 + Check tolerance
Aneroid pressure hPa Rated speed rpm Del. quantity		cm3/1000s 5.5
cm3/1000 strokes Tolerance cm3/1000 strokes	: ← 1.5	End of test specification sheet
Check tolerance cm3/1000S. Spreed	: +- 4.0	+
Tolerance cm3/1000 strokes	: 5.0	Ī

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 15.12.97 Test oil : 15.12.97

Combination No. : 0 403 446 216

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138

Governor

Governer design. : RQV300...1400MW48-8

Governer no. : 0 420 083 175

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ

Motor

: OM 366 A

Power KW

: 125.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 715 015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm :

600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: + 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	+ control lever + position degree : - 1
Check tolerance cm3/1000s. : 6.0	Rated speed rpm : 1590
	Rack travel in mm : 9.75 Tolerance mm : + 1.30
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 7.90	1
Tolerance mm : + 0.10	Rated speed rpm : 1400
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 11.0	hPa : -
Tolerance	Del. quantity
cm3/1000 strokes : +- 2.0	+ cm3/1000 strokes : 78.0
Check tolerance	Tolerance
cm3/1000S. : +- 4.5	cm3/1000 strokes : +- 1.0
Spreed	Check tolerance
Tolerance	- cm3/1000s. : +- 3.0
cm3/1000 strokes : 3.5	Spreed
Check tolerance	Tolerance
cm3/1000s. : 5.5	- cm3/1000 strokes : 3.5
CIID/ 10003 J.J	Check tolerance
	+ cm3/1000s. : 6.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	+
	+ control lever
Rated speed rpm : 1453	position degree : 111.0
guide sleeve	tolerance degree : + 4.0
travet mm : 8.30	+
Tolerance mm : + 0.15	+ RATED SPEED
	rack travel mm : 9.70
Rated speed rpm : 300	+ Rated speed rpm : 1445
guide sleeve	+ Tolerance 1/min : +- 5
travel mm : 1.22	+
Tolerance mm : + 0.20	+ rack travel nun : 4.00
	+ Rated speed rpm : 1550
Rated speed rpm : 594	+ Tolerance 1/min : + 15
guide sleeve	+
travel mm : 3.30	rack travel mm : 0.50
Tolerance mm : +- 0.25	+ Tolerance mm : + 0.50
	Rated speed rpm : 1650
Rated speed rpm : 400	+
guide steeve	<b>↓</b>
travel mm : 2.30	$\perp$
Tolerance mm : + 0.25	
TO COT GIFTOU THAT	LOW IDLE
Rated speed rpm : 1770	LOW IDEL
guide sleeve	1
travel mm : 11.50	T control lever
Tolerance mm : +- 0.50	position degree : 80.0
roterance in	tolerance degree : + 4.0
	Local ance degree . T 4.0
GUIDE SLEEVE POSITION	I Setting point wout human carries
GOINE SPEEKE LOSTIINA	+ Setting point w/out bumper spring
	Rated speed rpm : 100
	i naced speed ipiii . Too

CRT mm min.	: > 10.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.90 : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1400 : 10.75 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.25 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 11.80 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 200
Check speed 1/min Check	: > 80
speed 1/min	: < 230
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 750
Del. quantity cm3/1000 strokes Tolerance	: 78.0
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s. Spreed Folerance	: +- 4.0
cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 7.0
rack travel mm	: 11.80
100	

Tolerance mm	: ← 0.10
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity cm3/1000 strokes	: 83.0
Tolerance cm3/1000 strokes	: <del></del>
Check tolerance cm3/1000S.	: +- 8.0
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm	: 7.90 : + 0.10
Del. quantity cm3/1000 strokes Tolerance	: 11.0
cm3/1000 strokes	: ← 2.0
Check tolerance cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5
	· · · · · · · · · · · · · · · · · · ·

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.03.98 : ISO 4113

Combination No. : 0 403 466 131

Injection pump

Pump designation : PES6MW100/120RS1184

EP type number : 0 413 406 171

Governor

Governer design. : RSV375...1250MW2A334

: -1

Governer no. : 0 420 085 207

Cust. part No. : 3281954

Customer-spec. information

Customer : CUMMINS

Motor

: 6 BTA 5.9

Power KW

: 140.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar :  $\leftarrow$  1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

N09

x inside diameter : 2.0

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.55 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 111.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: <del>←</del> 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	- Check tolerance - cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	
	- CONTROL LEVER
Rated speed rpm : 375	- control lever - position degree : 111.0 - tolerance degree : + 4.0
Rack travel in mm: 7.25 + Tolerance mm: + 0.25 + Del. quantity	- RATED SPEED - rack travel mm : 9.30
cm3/1000 strokes : 18.0	Rated speed rpm : 1300 Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5 Spreed	Rated speed rpm : 1380 Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 3.5	rack travel mm : 1.00 Tolerance mm : +- 0.70
Check tolerance cm3/1000s. : 5.5	Tolerance mm : +- 0.70 Rated speed rpm : 1550
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1435 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	· · · · · · · · · · · · · · · · · · ·
#	LOW IDLE
cont. ol lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 87.0 tolerance degree : +- 4.0
position degree : -3	
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	position degree : 87.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 375
position degree : -3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	position degree : 87.0 tolerance degree : +- 4.0 Setting point w/out bumper spring
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100
position degree : - 3 Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 800 Del. quantity	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 111.0 Tolerance	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 111.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 7.25 Tolerance mm : +- 0.25
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 111.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 7.25 Tolerance mm : +- 0.25  TORQUE CONTROL Rated speed rpm : 1250
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : 800 Del. quantity cm3/1000 strokes : 111.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 87.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 375 rack travel mm : 6.75 Tolerance mm : +- 0.25  Rated speed rpm : 100  CRT mm min. : > 19.00  Testing:  Rated speed rpm : 375 rack travel mm : 7.25 Tolerance mm : +- 0.25

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 10.35
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 9.90
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 470 rack travel mm : 10.05 Tolerance mm : + 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 90.0
Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes : +- 5.0

Check tolerance

cm3/1000s. : +- 8.0

## LOW IDLE

Rated speed rpm : 375

Rack travel in mm : 7.25 Tolerance mm :  $\leftarrow$  0.25 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : **←** 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.12.97 : ISO 4113

Combination No. : 0 403 474 019

Injection pump

Pump designation : PES4MW100/720RS1151

EP type number : 0 413 404 104

Governor

Governer design. : RSV350...1200MW0A346

: -3

Governer no.

: 0 420 085 179

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM 364 A

Power KW

: 77.0

## TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x length mm : 600

x inside diameter :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

3.0

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing Tolerance : **←** 0.50

Check

tolerance "NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 11.55 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

N12

		<b>T</b>	
Check tolerance cm3/1000s. :	6.0	CONTROL LEVER	
Rated speed rpm :	350	control lever position degree tolerance degree	
Rack travel in mm :		RATED SPEED	
Tolerance mm : Del. quantity		rack travel mm	: 1.00
cm3/1000 strokes : Tolerance		Tolerance mm Rated speed rpm	: +- 0.70
cm3/1000 strokes : Check tolerance		rack travel mm	
cm3/1000s. : Spreed	+- 4.5	Rated speed rpm Tolerance 1/min	
Tolerance cm3/1000 strokes :	3.5	rack travel mm	
Check tolerance cm3/1000s. :	5.5	Rated speed rpm Tolerance 1/min	
(B) SETTING OF INJE	TTON PIMP	ASSEMBLY GOVERNOR	SETTING
WITH GOVERNOR	-	Rated speed rpm rack travel mm	
	-	Rated speed rpm	
GUIDE SLEEVE POSITION	ON -	Tolerance 1/min rack travel mm	
control lever		<b>6</b>	42/4
position degree Rated speed rpm :		Rated speed rpm rack travel mm	: 1241 : 10.50
Rack travel in mm : Tolerance mm :		Rated speed rpm Tolerance 1/min rack travel mm	: 1290 : +- 4
governor spring pre-tension	<del>-</del>	- Tack et avec inni	. 4.00
click setting x :	5.75	Rated speed rpm rack travel mm	
FULL LOAD DELIVERY	AT FULL LOAD STOP	Rated speed rpm Tolerance 1/min	
Rated speed rpm : Aneroid pressure	-	- rack travel mm	: 4.00
hPa : Del. quantity	700 -	- Rated speed rpm	: 1243
cm3/1000 strokes : Tolerance	+	- rack travel mm	
cm3/1000 strokes : Check tolerance	-	- Rated speed rpm - Tolerance 1/min	
Spreed	+- 3.0	- rack travel mm -	: 4.00
Tolerance cm3/1000 strokes : Check tolerance	3.5	- - Rated speed rpm - rack travel mm	: 1244 : 10.50
cm3/1000s. :	6.0	- Rated speed rpm	: 1293
	· ·		

Tolerance 1/min rack travel mm	: +- 4 : 4.00
Rated speed rpm rack travel mm	: 1245 : 10.50
Rated speed rpm Tolerance 1/min rack travel mm	: 1294 : +- 4 : 4.00
LOW IDLE	
Setting point w/o	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 19.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.40 : + 0.40
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1200 : 11.55 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.40 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.00 : ← 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
CRT ZERO POSITION	
Rack travel in mm Tolerance mm	: 9.95 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 12.40 : ← 0.10
Rated speed rpm Pressure hPa Tolerance mm	: 500 : - : +- 0.05

MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 375 : 1.70 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 200 : 0.50 : ← 0.10
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 700 : 600
Del. quantity cm3/1000 strokes	
Tolerance cm3/1000 strokes Check tolerance	: <b>←</b> 1.5
cm3/1000s. Spreed	: + 4.0
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 7.0
rack travel mm Tolerance mm	: 12.00 : +- 0.10
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 48.0
cm3/1000 strokes Check tolerance	: <del>+-</del> 1.0
cm3/1000s.	: +- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity cm3/1000 strokes	: 80.0

Tolerance cm3/1000 strokes : +- 5.0 Check tolerance cm3/1000s. : +- 8.0

# LOW IDLE

Rated speed rpm	:		350	
Rack travel in mm Tolerance mm		+-	6.40 0.40	
Del. quantity cm3/1000 strokes	:		12.0	
Tolerance cm3/1000 strokes Check tolerance	:	+-	2.0	
cm3/1000s.	:	+-	4.5	
Tolerance cm3/1000 strokes	:		3.5	
Check tolerance cm3/1000s.	:		5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.10.98 Test oil : ISO 4113

Combination No. : 0 400 876 405

Injection pump

EP type number : 0 410 896 896

Pump designation : PES6A95D41ORS2835

Governor

Governer design. : RSV400...1050A2C2263

: <del>-</del>8L

Governer no. : 0 420 232 615

Cust. part No. : 87 801 608

Customer-spec. information

Customer : FNH-GEOTECH : 7.5 L-8640 Trak

Motor

: 131.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C

: +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

**REMARKS** 

2.0

x inside diameter :

x length mm :

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance cm3/1000s.

: +- 4.5

	ı
Rated speed rpm : 450	ASSEMBLY GOVERNOR SETTING
Rack travel in mm: 5.70	Rated speed rpm : 1093 rack travel mm : 11.20
Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 15.0	Rated speed rpm : 1168 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0	rack travel mm : 4.00
Check tolerance cm3/1000S. : + 4.5 Spreed Tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 1094
cm3/1000s. : 9.0	+ rack travel mm : 11.20
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1169 Tolerance 1/min : + 5 rack travel mm : 4.00
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
control lever position degree : - 3 Rated speed rpm : 800	Rated speed rpm : 1095 rack travel mm : 11.20
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm : 1170 Tolerance 1/min : +- 5 rack travel mm : 4.00
governor spring pre-tension click setting x : 3.50	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1096 rack travel mm : 11.20
Rated speed rpm : 1050 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 110.0	Rated speed rpm : 1171 Tolerance 1/min : + 5 rack travel mm : 4.00
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1300
cm3/1000s. : +- 4.5	Rated speed rpm : 1097 rack travel mm : 11.20
CONTROL LEVER  control lever  position degree : 101.0  tolerance degree : +- 4.0	Rated speed rpm : 1172 Tolerance 1/min : + 5 rack travel mm : 4.00
totel dilice degree . The 4.0	rack travel mm : 0.85 Tolerance mm : + 0.55

Rated speed rpm	: 1300	†
Rated speed rpm rack travel mm	: 1098 : 11.20	ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm Tolerance 1/min rack travel mm	: +- 5	SETTING Rated speed rpm : 500
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1300	+ Pressure hPa : 1200 + rack travel mm : 14.10 + Tolerance mm : +- 0.10
LOW IDLE		+ Rated speed rpm : 500 + Pressure hPa : - + rack travel mm : 10.65 + Tolerance mm : +- 0.05
control lever position degree	: 77.0	+ MEASUREMENT
tolerance degree		+ Rated speed rpm : 500
Setting point w/c Rated speed rpm rack travel mm	: 450	Pressure hPa : 500 rack travel mm : 11.65 Tolerance mm : +- 0.20
Tolerance mm	: +- 0.10	Pressure hPa : 800 + rack travel mm : 13.60
Rated speed rpm	: 100	Tolerance mm : + 0.05
CRT mm min.	. 40 50	
CRI mm min.	: > 19.50	İ
Testing:	: > 19.50	FUEL DELIVERY CHARACTERISTICS
	: 450 : 5.70	Aneroid pressure hPa : 1200
Testing: Rated speed rpm rack travel mm	: 450 : 5.70 : ← 0.10 : 2.00 : 600	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance
Testing:  Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min	: 450 : 5.70 : ← 0.10 : 2.00 : 600	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Testing:  Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL Rated speed rpm rack travel mm	: 450 : 5.70 : ← 0.10 : 2.00 : 600 : ← 30 : 1050 : 12.20	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0
Testing:  Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min	: 450 : 5.70 : ← 0.10 : 2.00 : 600 : ← 30 : 1050 : 12.20	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 3.5
Testing:  Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL Rated speed rpm rack travel mm	: 450 : 5.70 : + 0.10 : 2.00 : 600 : + 30 : 1050 : 12.20 : + 0.10 : 750	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 6.0
Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 450 : 5.70 : + 0.10 : 2.00 : 600 : + 30 : 1050 : 12.20 : + 0.10 : 750 : 14.10 : + 0.10	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance
Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 450 : 5.70 : + 0.10 : 2.00 : 600 : + 30 : 1050 : 12.20 : + 0.10 : 750 : 14.10 : + 0.10 : 925 : 13.25 : + 0.15	Aneroid pressure hPa : 1200 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 137.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 6.0

Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.5

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 200.0
Tolerance
cm3/1000 strokes : + 10.0

Check tolerance cm3/1000s. : +- 13.0

## LOW IDLE

Rated speed rpm : 450 Rack travel in mm: 5.70 Tolerance mm : ← 0.10 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : **←** 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Combination No. : 9 400 030 708FS

Edition

: 03.03.97

Test oil

Injection pump

EP type number : 9 410 037 236

Pump designation : PES6A1000320/3RS3506

Governor

Governer design. : RQV400...1250AB1323R

Governer no. : F 002 A30 001

Cust. part No. : TATA-CUMMINS

Customer—spec. information Customer : CUMMINS
Motor : GRT - 1:

Motor

: 6BT - 125 ps

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 5.75 Tolerance : **←** 0.10

Check

tolerance °NW

: +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.30

Tolerance mm : +- 0.05

N20

Del. quantity cm3/1000 strokes	: 78.0	Tolerance mm : +- 0.25
Tolerance	10	Rated speed rpm : 549 guide sleeve
cm3/1000 strokes		travel mm : 3.30 Tolerance mm : + 0.25
Check tolerance cm3/1000s.	: <b>←</b> 3.0	Rated speed rpm : 560 guide sleeve
Spreed		travel mm : 3.37 Tolerance mm : + 0.25
Tolerance cm3/1000 strokes	: 3.5	Rated speed rpm : 1620 guide sleeve
Check tolerance cm3/1000s.	: 6.0	travel mm : 11.50 Tolerance mm : + 0.50
Rated speed rpm	: 400	GUIDE SLEEVE POSITION
Rack travel in mm	+	Rated speed rpm : 1250
	: + 0.10 <sup>1</sup>	Rack travel in mm : 16.00
Del. quantity	+	Tolerance mm : + 1.30
cm3/1000 strokes	: 10.0	
Tolerance	+	FILL LOAD OF THEFT AT CHILL LOAD OTHER
cm3/1000 strokes Check tolerance	: + 3.0 +	FULL LOAD DELIVERY AT FULL LOAD STOP
	: ← 4.5	Rated speed rpm : 1250
Spreed	Ţ.,	Aneroid pressure
Tolerance	1	hPa : -
cm3/1000 strokes	: 4.5	Del. quantity
Check tolerance	+	cm3/1000 strokes : 78.0
cm3/1000s.	: 5.5	Tolerance
	†	cm3/1000 strokes : + 1.0
(B) SETTING OF INJE	ECTTON DIMP	Check tolerance cm3/1000s. : + 3.0
WITH GOVERNOR	1	Spreed
	1	Tolerance
		cm3/1000 strokes : 3.5
GUIDE SLEEVE TRAVEL	- †	Check tolerance
Rated speed rpm :	. 13/.7	cm3/1000s. : 6.0
guide sleeve	, 1341 I	
travel mm :	: 8.48	
	: +- 0.15	CONTROL LEVER
Rated speed rpm : guide sleeve	: 400	control lever position degree : 61.0
travel mm :	: 1.71	tolerance degree : + 4.0
	+ 0.20	
	+	RATED SPEED
	: 880 +	rack travel mm : 9.30
guide sleeve travel mm :	4.97	Rated speed rpm : 1335
	+- 0.25	Tolerance 1/min : + 5
TO CET UNITE HAIR	Ī	rack travel mm : 4.00
Rated speed rpm :	499	Rated speed rpm : 1430
guide sleeve	+	Tolerance 1/min : + 15
travel mm :	2.75	

rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
LOW IDLE	· · · · · · · · · · · · · · · · · · ·
control lever position degree tolerance degree	: 15.0 : ← 4.0
Setting point w/d	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 9.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 6.40 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 630 : +- 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1250 : 10.30 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 750 : 10.30 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 800 : 1000 : 10.30 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 800 : - : 10.30 : + 0.10

## MEASUREMENT

Rated speed rpm	:	800
Pressure hPa	:	500
rack travel mm	:	10.30
Tolerance mm	: +	- 0.10

Start interlock			
Rated speed rpm Rated speed rpm	: > : <	120 300	
Check speed 1/min Check speed 1/min	: >	100 340	

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	•	
Rated speed rpm	:	550
Del. quantity cm3/1000 strokes		(0.3
Tolerance	•	60.2
cm3/1000 strokes		- 2.0
Check tolerance	. '	2.0
cm3/1000s.	: +-	- 3.5
Spreed	•	
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	10.0
An		
Aneroid pressure		
_	•	750
Rated speed rpm		750
rack travel mm	: .	10.30
Tolerance mm	: +-	· 0.15

rack travel mm Tolerance mm	: +-	10.30
Del. quantity cm3/4000 strokes Tolerance	:	70.0
cm3/1000 strokes	: +-	2.0
113/10 \S. Six sed	: +-	3.5
Tolorance cm3/1880 strokes theck tolerance	:	8.0
cs3/1000s.	:	10.0

STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		14.40
Tolerance mm	:	+-	0.50
Del. quantity			
cm3/1000 strokes	:		97.0
Tolerance			
cm3/1000 strokes	:	+-	8.0
Check tolerance			
cm3/1000s.	:	+-	10.0

# LOW IDLE

Rated speed rpm	:		400
Rack travel in mm Tolerance mm	•	+	6.40 0.10
Tolerance	:		10.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+	4.5
Tolerance cm3/1000 strokes Check tolerance	:		4.5
cm3/1000s.	:		5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.09.97 Test oil : ISO 4113

Combination No. : E 040 101 500

Injection pump

Pump designation : PES6A100D320/3RS3506

EP type number : 0 042 096 200

Governor

Governer design. : RQV400...1250AB1328R

Governer no. :

Cust. part No. : TATA-CUMMINS

Customer-spec. information Customer : CUMMINS

: 6BT - 125 ps Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N24

x inside diameter : 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order

: 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: **←** 0.75

Start of delivery blocking

\*NW after s.o.d. : 5.75

Tolerance

: +- 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 10.30

Tolerance mm : +- 0.05

Rack travel in m Tolerance mm	n: 6.40 : +- 0.10	
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	
GUIDE SLEEVE TRAN	/EL	
Rated speed rpm guide sleeve	: 1308	
travel mm Tolerance mm	: 8.09 : + 0.15	
Rated speed rpm guide sleeve	: 400	
travel mm Tolerance mm	: 1.71 : + 0.20	
Rated speed rpm guide sleeve	: 860	
travel mm Tolerance mm	: 4.87 : +- 0.25	
Rated speed rpm guide sleeve	: 499	
travel mm Tolerance mm	: 2.75 : +- 0.25	
Rated speed rpm guide sleeve	: 549	
travel mm Tolerance mm	: 3.30 : +- 0.25	
Rated speed rpm guide sleeve	: 560	
travel mm Tolerance mm	: 3.37 : +- 0.25	
Rated speed rpm guide sleeve	: 1620	
travel mm Tolerance mm	: 11.50 : +- 0.50	
GUIDE SLEEVE POSITION		
Rated speed rpm : 1250		
Rack travel in mm Tolerance mm	: 14.00 : +- 1.30	
CONTROL LEVER	<del></del>	

control lever position degree tolerance degree	: 58.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1300
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1400 : + 15
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1490
LOW IDLE	
control lever position degree tolerance degree	: 15.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 9.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 6.40 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 630 : +- 30
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1250 : 10.30 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 550 : 10.30 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 10.30 : +- 0.15

## Start interlock

Rated speed rpm : > 170 Rated speed rpm : > 300

Check

speed 1/min : < 190 Check speed 1/min : < 340

## FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.30 Tolerance mm : + 0.15

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.40 Tolerance mm :  $\leftarrow 0.50$ 

## LOW IDLE

Rack travel in mm : 6.40 Tolerance mm : + 0.10